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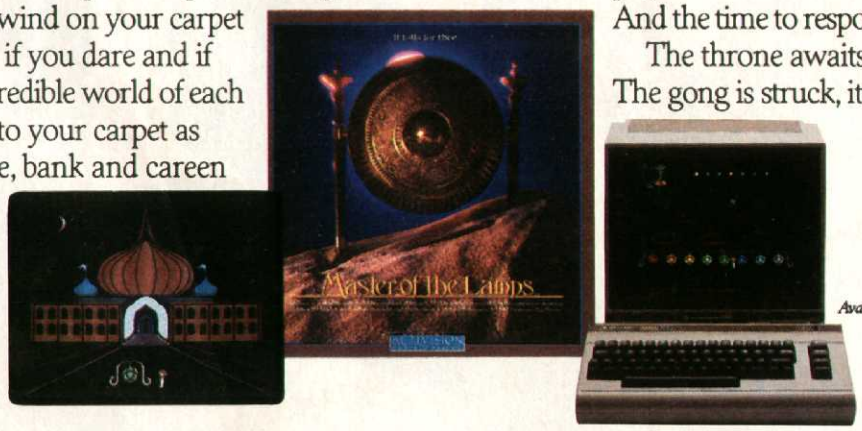

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Tom Weihs

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IMAGIC

On-Line

The Amiga and the ST

The constant flux of the computer industry is certainly enough to cure the greatest case of terminal ennui. Years ago, Tom West, the hotshot designer at Data General, made an astute comment: "A year in the computer business is like a year in a dog's life." Never has a simile been truer. Not long ago, Atari was a thriving company, owned by Warner Communications Inc., the multibillion-dollar entertainment conglomerate. Thanks to the Atari 400 and 800 home computers and arcade games like *Asteroids* and *Missile Command*, Atari flourished. It looked like the $26 million Warner paid for Nolan Bushnell's little dream-to-reality was really a bargain.

But then something happened. The kids who hung out in arcades grew up. They got tired of video games, especially the hand-eye coordination ones. It was especially telling that when Warner finally lost enough money (an incredible half-billion dollars in one year alone), it couldn't even unload the arcade division as part of the package to its new owners.

The arcade business didn't die, of course. It just stopped having boom years. It wasn't because teenagers stopped playing shoot-'em-ups altogether. They simply developed other interests. They went to college, discovered text adventure games, and perhaps learned the value of spreadsheets and word processors.

Today, as we go to press, we're anxiously awaiting the introduction of two heralded pieces of hardware: Commodore's Amiga computer, and the Atari 130ST and 520ST "Jackintoshes." There has been considerable advance hype and speculation about these new products; in sum, they supposedly deliver graphics and computing power at a low price heretofore unavailable in the micro business.

The key word in the above paragraph, however, is "introduction." It's one thing to introduce a product, and quite another for it to be made available in a store so you can buy it. Jack Tramiel, late of Commodore and now the new helmsman of Atari, introduced his Macintosh clones last January with a promise of late Spring delivery. But, again, it's one thing to watch a seemingly marvelous piece of technology at a trade show, and another to make 750,000 glitch-free computers dance off the assembly line.

Just recently, Atari cancelled all its exhibition space for the mammoth Consumer Electronics Show slated for June (see Bulletin Board for details). The original April delivery date has been delayed until July. It's another sad yet common story in the business. Products are coming, coming, coming, and the consumer waits, waits, waits. Rumors have also been circulating in the trade press about Commodore having trouble getting certain Amiga chips to work consistently. Will this computer be deluged with problems that cause continual delays? We hope not; it certainly does nothing to build good will with the computer-buying public.

The ultimate tests, of course, of these new products will come from the software end. A computer becomes useful (and successful) only if software authors write programs for it. And they'll take the chance only if they think the public will buy it. So far, there's little here to indicate Atari has anything close to a winner with its ST series. Software authors we've spoken with like the computer, but feel they can't count on the "new Atari." John Loveless, when he ran Synapse, smiled and said he thought the ST had wonderful potential. But in almost the same sentence, he added that Synapse wasn't ready to develop programs for it. The Carlston brothers at Broderbund won't write for Tramiel either. And Guy Nouri at Interactive Picture Systems is totally perplexed. Last January, the Atari people told him to call if he was interested. Nouri called; Atari never answered.

When these computers are finally ready (Atari has cancelled its original plans for selling the ST in K-Mart and Sears), the final arbiter will be you. If the computers are good and reliable, you'll support them with your hard-earned cash. If they're not, you won't, and we'll see more obituaries like those for the TI-994a, the Coleco, and the PCjr.

—*The Editors*

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July, 1985

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Bulletin Board

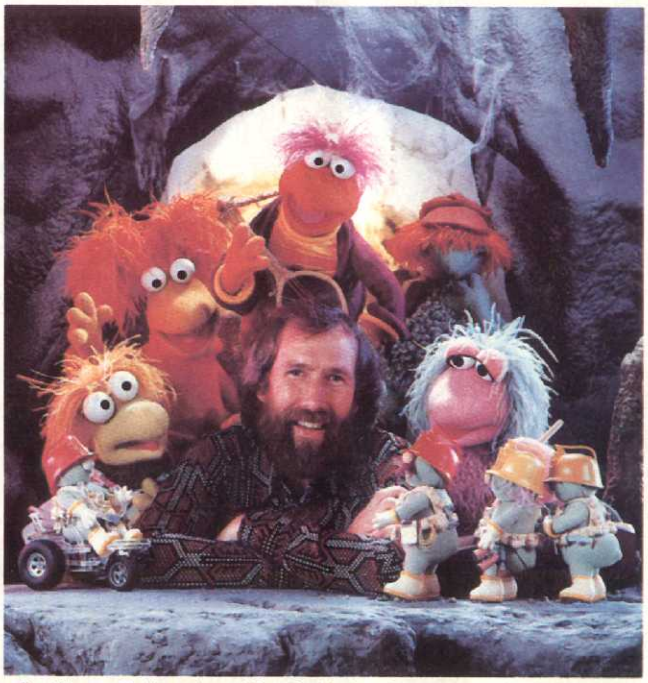
Notes from the Neighborhood

SOFT TALK

HEARD IT THROUGH THE GRAPEVINE DEPT.: Infocom is developing its first graphic program. The company that made text games famous, however, would rather talk about *Conjurer* — the last installment in the *Zork* series (aka, *Zork VI*) — which is also in development. *Zork* authors Dave Lebling and Marc Blank are writing what Infocom is calling "the grand finale" of the series, which also includes *Enchanter* and *Sorcerer* . . . Michael Berlyn, one of the first sci-fi writers to make the leap into interactive fiction (*Suspended, Infidel, Cutthroats*) has left Infocom . . . A text adventure based on *Star Trek* will be released by Simon & Schuster in the fall.

EDUCATED GUESSES: Spinnaker is planning to branch out of the software market with the release of four half-hour long children's video cassettes. The Cambridge-based Video Research is adding finishing touches to the videos that will feature a cast of puppets and actors. One is tentatively titled *Readers of the Lost Alphabet*. If these cassettes are successful, the next batch may be based on Spinnaker's software characters . . . The Muppets' creator Jim Henson is working with CBS on six Fraggle Rock titles; the first of the series, *Fraggle Rock: The Mystery of the River of Song*, is scheduled for a September release, and intended for ages eight to 12. The mystery is why the music stops; the object is to bring happiness and happy songs back to the Fraggle underworld . . . Another CBS note: The company will co-develop software with the Smithsonian Institute to be exhibited at the museum and also to be sold to schools and consumers.

THINK FAST (BRAINPOWER)


Jim Henson's Fraggles will make their software debut in CBS titles.

ODDS & ENDS: Videoware's *Video Title Editor* lets you add titles, credits, messages and color screens to your home video productions. You need a VCR, an Apple II series, Atari or Commodore computer, and the software. Call: (313) 626-7208 . . . Magnetic Arts has eight *Art Data Disks* — from Erotica to the Beatles — in its Image Library for use with *MacPaint*. Call: (415) 331-5069 . . . Sight & Sound has upgraded two of its most popular music programs: The enhanced *Kawasaki Rhythm Rocker* includes a new notational system, a score-printer function and the ability to overdub 750 notes at once. The new, improved *Incredible Music Keyboard* program lets you use three voices, displays notes on the staff and features five background accompaniments. To upgrade your software, the cost is $15 and $7 respectively . . . Commodore's Customer Support Hotline number is (800) 247-9000. It's staffed from 9 a.m. to 12 midnight, Monday through Friday.

THE NAME GAME: This month's best-named software award goes to *Mac the Knife*, the two-volume clip art and font program from Miles Computing . . . Honorable mention: *Wombats I: A Parody Adventure*—for Atari computers only (". . . spoofs adventure games and life in general," we're told) from Dynamic Software Design (P.O. Box 8169, Fremont, CA 94537) and *Morl*, an unfinished work of John O'Neill's. *Morl* is an acronym for Middle of the Road Lizard.

LEARNING CURVES: The first program in Hayden's science series is *Temperature Lab*. By using a heat-sensing "electronic thermometer" (it's connected to an interface module and plugs into Commodore-64 and Apple II series game ports), you can record temps and see them displayed on the screen. Next in the series, which is being designed by Creative Technologies, will be *Light Lab* . . . Two new edu-games from Sunburst are *Targets*, a math program that requires children to reach a "target" number in as many ways as possible, and *Code Quest*, a jumble-type alphabet game . . . Brainworks has changed its named to Brainpower. The first releases under this new heading are *Think Fast*, a memory-improvement program; *Telechess* (for the Macintosh), which can be played via the phone lines; and *Torpedo Run*, a sub simulation of eight World War II missions . . . World Book is the second major encyclopedia company to dive into the software business in recent months (Encyclopaedia Britannica bought DesignWare and Edu-Ware in March). Twenty-one educational titles are in the works . . .

Scholastic has yet to lose the faith in IBM PCjr. It just released a version of *Story Tree*, the story-processing program, for the PCjr.

STRATEGY SESSION

In a recent visit, Gary Carlston, Broderbund's vice-president of strategic planning, showed off two of the company's newest products — *Where in the World is Carmen Sandiego?*, a detective game that teaches geography, and *FantaVision*, a menu-driven animation program that picks up where *Movie Maker* left off. The latter can generate 63 images for every one drawn, and animate up to eight things at once. Carlston describes it as "basically electronic Silly Putty." *FantaVision* generates one minute of animation on a mere 1K of data. This means it could be a boon for graphic/text game designers — you can get great graphics *and* a literate parser.

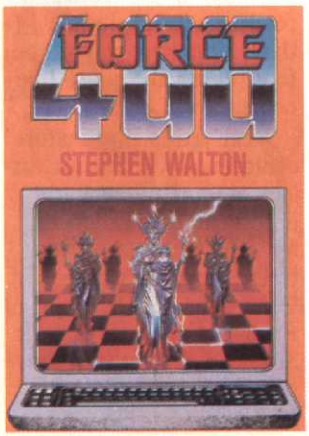
Broderbund, Carlston admits, has been developing software for Commodore's promised Amiga computer on a 68000-based Sun Development System that was provided by Amiga. (The system costs between $20,000 and $25,000.) "Amiga has been aggressive about funding development," he says. "We expected that the Amiga would have been out already. Maybe they're having supply problems like everybody else." The latest report as we go to press is that the first Amigas will be available in July.

In response to our question about writing software for the Atari ST computer, Carlston said sharply, "We don't work with people we're suing." Two years ago, Broderbund converted four of its popular titles into cartridges for the Atari VCS, but never saw most of the money Atari had agreed to pay for the conversions. "Somebody's got to be responsible," he said. "The line of litigations sitting at Atari's door is a mile long." Carlston didn't even bother to investigate the STs on display at the last electronics show. "Our programmers didn't come back begging to write for the ST," he added.

Carlston's brother, Doug (Broderbund's president), meanwhile, has completed a book about the software industry for Simon & Schuster. This is not his first book publishing effort: Doug's *Softalk* columns were bound together in the collection, *Applesoft Isn't Hard.*

BAEN'S SCI-FI GAME PLAN

Baen Software and Fred Saberhagen are almost synonymous. Saberhagen based Baen's first titles — *Wings Out of the Shadow* and *Berserker Raids* — on his own Berserker sci-fi book series, and the third title, *Wizard War*, was co-written by Saberhagen and programmer Lloyd Johnson. But two of Baen's newest sci-fi adventures, *Starclash II* and *Force 400*, were written by Stephen Walton, and the company is promising an assortment of games based on the works of such well-known names as Robert A. Heinlein, Larry Niven and Jerry Pournelle.



Several Baen projects are nearing completion: the adaptation of Stephen R. Donaldson's *Chronicles of Thomas Covenant* (titled *Animal Lover*) and an original game called Nukrat by Gordon (*Dorsai!*) Dickson.

ATARI DOWN FOR THE COUNT?

For nine years running, Atari never passed up the opportunity to show off its latest goodies at the Consumer Electronics Show (CES). But, in June, Atari failed to make an appearance at the Chicago show, leading to a meteor-like storm of speculation: Would the company's promised Macintosh-like STs ever roll off the assembly line?

"Atari's out of the picture," said one source. "They don't have the financial resources to get the ST out the door."

At Atari, we were told by an unidentified non-spokesman that the "whole posture of Atari has turned around." He then asked: "Is IBM at CES? Is Apple at CES? The ST is a very high-tech system."

What's up Jack Tramiel's sleeve? New Atari computers for the masses. But when?

Atari was expected to occupy 6500 square feet of floor space (at $11/foot) before the company gave notice that it would not be exhibiting at the show. Another late pullout was CBS Software. "There's a lot of volatility right now in the industry," commented a CES spokesman. "Business trends are always reflected at the show." Atari made no official comment about this matter.

Bulletin Board

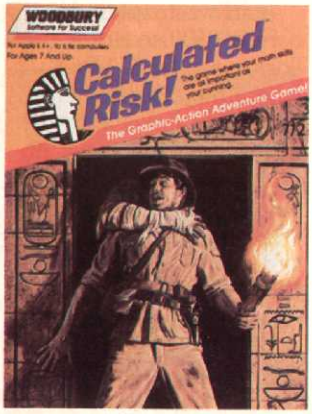
Notes from the Neighborhood

PLAY WRITING

Woodbury's *Playwriter* series may be for kids, but that hasn't stopped grown-up writers like Jim Lewis from playing around with it. In fact, Woodbury recently named Lewis, an editor at *3-2-1 Contact* magazine, the winner of the *Playwriter* Writing Contest in the *Adventures in Space* program category.

Lewis' yarn, titled "Return of the Toaster Ovens," stars Mojo Gandhi and takes places in the Ford Galaxy on planet Rototiller. References to "20th Century icons," such as Theodore Cleaver and Eddie Haskell, perhaps attest to Lewis' admission that he was "drinking heavily" the day he wrote the story. "It's part *Mad Lib*, part write-a-paragraph-or-two-to-explain-what-happens," is how he describes the *Playwriter* process. "I just wrote a standard chapter. To my surprise, I received a book in the mail informing me that I had won."

To the surprise of the audience that attended the award presentation, Lewis never showed. "I forgot," he says with a laugh. "The least I could've done was have an American Indian accept in my stead." Two other stories — "The Seven-Year Glitch" and "Ethel Merman in 'Call Me Modem' " — nearly beat out Lewis' entry for the top prize.

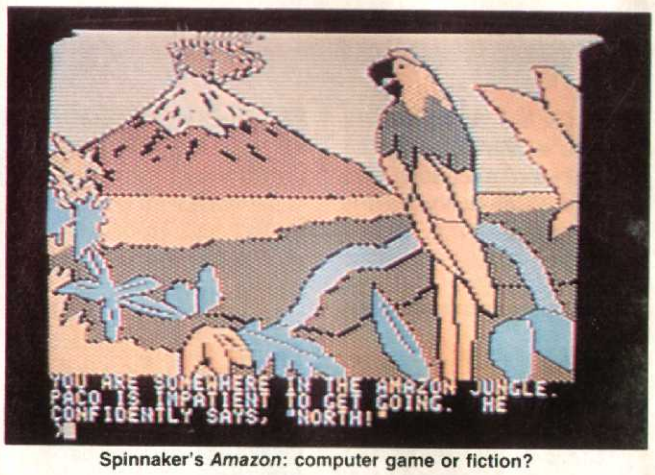


Woodbury also announced that two additions to the *Playwriter* series would be forthcoming. They are: *Mystery*, which helps you write a detective story; and *Castles & Creatures*, a medieval adventure story generator. Another new Woodbury release, *Calculated Risk*, teaches math adventure-style in, among other places, a Bedouin bazaar in Cairo. Lastly, Woodbury is sponsoring another writing contest — this time for kids only. "The Great American Writing Contest" will run from October 15 to January 15, 1986; cash, computers, and recognition (Grolier, Woodbury's distributor to the school market, plans to publish the best stories) will be awarded the winners.

ELECTRONIC FICTION 101

Are computer games like *Witness* and *Amazon* literature? Not quite yet, according to Dr. Peter Jordan, an associate professor of English at Tennessee State University, who chaired a seminar that attempted to answer this question at a recently-held conference of the Popular Culture Association in Louisville, KY.

"The novelist creates the illusion of complex worlds," explains Dr. Jordan. "In the so-called interactive novels that I've seen, scenes are described in complex language, but the possibilities of worlds is limited by the interaction. Two questions should be asked: What is the artistic quality of the novels themselves and how effective is the interaction? In my opinion, parsers are still way too dumb. What we see right now is the awkward, crude rumblings of a new art form."



Spinnaker's *Amazon*: computer game or fiction?

In programs such as *Fahrenheit 451* and *Hitchhiker's Guide to the Galaxy*, Dr. Jordan sees little improvement over the original *Adventure* by Crothers and Wood. "The adventure version of *Hitchhiker's* does a fair job only because *Hitchhiker's* is not much of a book," he says. "And I'm not sure that *Pac-Man* as a game isn't better than *Witness*." Though Dr. Jordan has yet to "read" Synapse's *Mindwheel*, he contends that "doubling the size of the parser is still quantum leaps below the effects of reading a novel. I really think it's a long way off before [electronic novels] become a form of literature."

Next year's Pop Culture conference will discuss various aspects of computer entertainment. Proposals for papers should be sent to Dr. Jordan's attention at Tennesses St. U., Dept. of English, College of Arts & Sciences, Downtown Campus, 10th & Charlotte, Nashville, TN 37203.

LAST CALL FOR COMPUTER CAMP

Want your kid to learn a good tennis backhand and become computer literate too? The International Junior Tennis Academy in Westcher, PA is offering a six-week summer camp where instructors will chart your child's tennis progress and teach introductory computer programming for $2550. For more info, call: (215) 233-4042.

Computers and performing arts joins hands at French Woods in Hancock, NY and Starucca, PA ($3100/nine weeks, (914) 354-9267), as well as at the Ballibay theatre camp in Camptown, PA ($2175/seven weeks, (717) 746-3223). All three camps are equipped with Apple computers.

Perhaps the little darling has been sitting in front of the TV too long and has developed something of a gut. Send him to Camp Shane in Ferndale, NY ($2300/ten weeks, (914) 292-4644) where Commodore 64s will help him go on a computer-generated diet. There are also a number of Weight Watchers Camps ($1090/two weeks, (800) 223-5600)

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throughout the U.S. and Canada that include optional computer instruction.

The concept of hacking away the summer months has its appeal, but David Sachs of Computer Summers thinks computer camping can get out of hand. The twelve camps he works with offer two hours of Logo instruction each day. The rest of the camp time is devoted to traditional activities because, Sachs says, "intensive programs are repugnant to me. Kids need a full array of activities, in addition to technological training."

Three camps Sachs works with: Adventure Unlimited in Buena Vista, CO ($775/two weeks, (303) 779-3000) specializes in mountain climbing, white-water rafting, and horseback riding; the Cape Cod Sea Campus in Brewster, MA ($2680/seven weeks, (617) 896-3451) has an outstanding sailing program; and, according to Sachs, the Cottontail Ranch Club in Malibu, CA ($815/two weeks, (818) 880-4552) is one of the top windsurfing and riding camps in the country.

JOKE OF THE MONTH

Hughes International has been getting plenty of mileage out of the press release that told of the company's plan to staff a New York fast-food restaurant with robots. In the same week, both *New York* magazine and the *New York Times* detailed Peter Hughes' grand scheme that would have little robots taking, cooking and delivering orders and making change for what promises to be startled customers. But the *Times* outdid itself in the editorial, "Ketchup by Robot."

"But what about all those teenage kids it would replace?" the editorial writer inquired. "Hughes is sure that his idea will open up plenty of new jobs for them in robot factories. Perhaps. We'd feel better if he also had a robot that keeps young people from dropping out of school and teaches them what it takes to get hired in a robot factory." How technophobic can you get?

CHAMPIONSHIP LODE RUNNER

Pac-Man who? In Japan, the hottest computer game these days is the U.S.-made *Lode Runner* (courtesy of Broderbund). Hundreds of thousands of cartridges and tapes (disk drives are rare in Japan) of *Lode Runner* have been sold for the NEC computer and the dozens of MSX models. Even an arcade game based on *Lode Runner* has been released.

At the recent Comdex computer show in Tokyo, youths competed for prizes in a day-long *Lode Runner* play-a-thon. (Bill Budge's *Raster Blaster* was the focus of another contest.) In the fantasy role-playing category, *Black Onyx* (written by Hank Rogers) appeared to be the most popular item.

Trying to buy a Japanese-made disk to run on an Apple II proved to be the most difficult task of our stay. After searching every shop in the Akihabara district, we could only find one: *Osiwari* (in English: *Sexy Girls Game*). Back home, we discovered it consisted of drawings of nude women and a hand pointer; touching an errogenous zone makes the area become red. All for 8500 yen ($34 U.S.).

Another highlight of our trip was having our palms read by computer. More on this unique form of Japanese street art in the next *CE*.

DIAL X FOR XNET

"WANTED: Male, 25-50, who shares one or more of the following interests: A good old boy who likes country music as much as I do; anyone who's into theatre; someone who likes sailing or boats in general; someone who likes good food, both American and foreign. If you fit any or all of these, and want to chat, or whatever, leave me a note in E-Mail."

The above personal was signed "Honkytonk Girl" and left on the "Looking for Men" bulletin board offered by XNET Computer Services. Essentially, XNET is an on-line personal ads network where kinky conversation replaces the standard techie communiques found on most boards. "We get some wild ads," says XNET's Gordon Mack. "It's become a huge swinging network through out the country. It's like Sodom and Gomorrah."

XNET's 25 different boards cater to just about every sexual taste. Another lesser-known service provided by XNET is Music Con, which is primarily for itinerant professional musicians who want to keep in touch with each other while they're on tour. To log-on to XNET, call: 516-549-0845.

NCTV TAKES ON D & D

"Dungeons & Dragons Game Kills 27" screamed the headline on the front page of a recent issue of *NCTV News*, the house organ of Dr. Thomas Radecki's National Coalition on Television Violence. It seemed more like a *National Enquirer* headline.

"Sometimes we might get carried away," admits Dr. Radecki, a clinical instructor in the pyschiatry department at the University of Illinois School of Medicine. "I guess our wording could be a little

more gentle."

At issue are 29 deaths over the last five years which Dr. Radecki claims are somehow related to the play of *Dungeons & Dragons*, the immensely popular fantasy role-playing game. Thirteen of those deaths probably wouldn't have happened, he says, had the youngsters, aged 12 to 21, never played *D & D*. Dr. Radecki backs up his charges with evidence supplied by newspaper articles, police reports, hearings and even diaries of the deceased. In the case of a suicide/murder involving two brothers, the detective report stated: "No doubt *D & D* cost them their lives."

Contends Dr. Radecki: "Playing *D & D* leads to increased tendencies toward homicide and suicides. It's an out-and-out war game and promotes violent fantasies. Granted, *D & D* is played very calmly around a table, but Pentagon decisions are made calmly around tables too. The next generation of Pentagon commanders are growing up on *D & D*."

Dr. Radecki thinks the government should investigate the deaths and that TSR, the company that sells the game, be required to print a warning on the box. "We're not trying to censor," Dr. Radecki says. "It just seems to us that nobody is interested in doing anything about this problem."

In the past, NCTV attacked video games for their violent content. Surprisingly, Dr. Radecki has yet to take issue with the various *D & D*-like role-playing computer games. "I'm primarily concerned with how people are being desensitized to violence every day," he says. "It worries me that Reagan's favorite book is *World War III*. Mr T-type thinking is very dangerous. The good-versus-evil storyline we constantly see is not part of the Judeo-Christian ethic. All it serves to do is polarize people and make them more prone to solving problems violently."

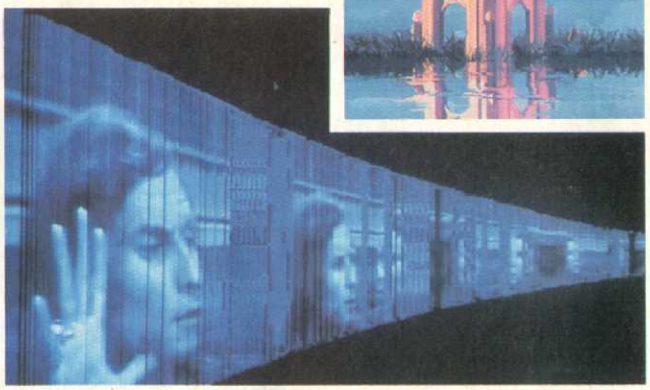
SUPER PUNCH OUT BY FBI

Is it real or is it counterfeit? Any seasoned arcade player will tell you that bootleg video games come with the territory, but tell that to the FBI, which recently busted five men in six states on charges of counterfeiting games such as *Karate Champ*, *Super Basketball* and *Ms. Pac-Man*. According to the Amusement Machines Association, half the games found in arcades and assorted locations are fakes. Losses incurred by legitimate manufacturers, reports the AMA, exceed $400 million annually.

In a related story, Scotland Yard arrested two hackers for allegedly infiltrating the electronic mail section of British Telecom's Prestel videotex system. Both hackers are known for their contributions to the Micronet SIG on Prestel. These were the first computer-piracy arrests in the history of the U.K.

SHOWING OFF

The granddaddy of computer graphics shows, Siggraph, will convene for the twelfth time from July 22-26 at San Francisco's Moscone Center. Traditionally, the newest developments in all forms of computer-generated art are introduced at Siggraph. In addition to displays, there will be numerous courses offered, such as one dealing with image-rendering tricks taught by Lucasfilm's Robert Cook. For more information, call: (312) 644-6610.



These computer graphics were featured at last year's Siggraph.

Another show worth noting is the International Personal Robot Congress & Expo (IPRC '85) from Sept. 6-8 also at S.F.'s Moscone Center. Most of the major personal robot makers — Heath, Hubotics, Androbot, RB Robot — will be represented. A Ping-Pong game between robots is scheduled as are various conference sessions and an art exhibit. Call: (313) 271-7800.

RELEARNING LOGO

The Logo programming language has always been tainted with the image of being too simple. It might be fine for teaching elementary school children about geometry, physics and math, but for higher education, professionals summarily dismiss Logo. Too bad, says Dan Watt of Keene State College's Logo Institute. He contends that Logo, the child of Lisp (the list-processing language used in artificial intelligence research) is extremely effective for teaching higher grade levels as well as diverse subjects.

Watt, together with his wife Molly and associate Tony Stavely, run the Logo Institute during July on the campus of the New Hampshire college. Aimed primarily at teachers, he says the Institute's goals "are not intended to sugar-coat learning. The programs we come up with may be games, but the learning is embedded in the activity itself."

From music construction to adventure games to creating educational data bases, the Institute tries to apply Logo to as wide a range of subjects as are taught from preschool to the college level. "We're not trying to compete with established software companies," Watt says. "We take existing programs

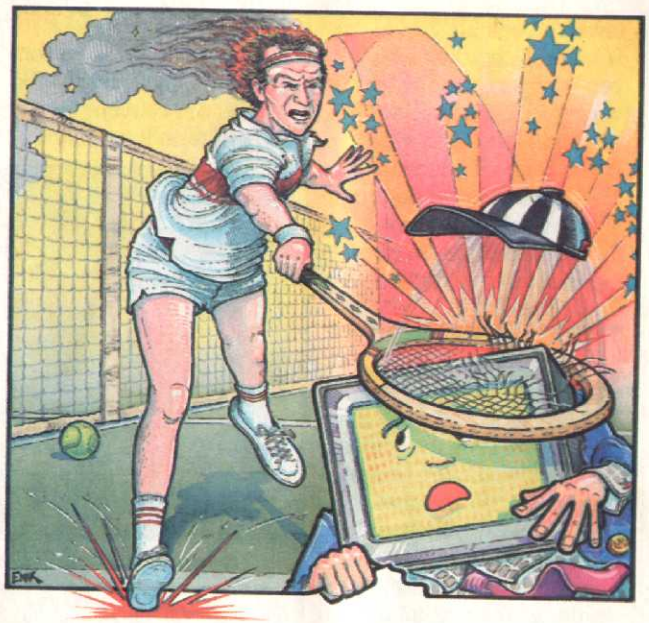
and modify them for particular uses." Some of the subjects being offered this summer include: top-down and bottom-up programming, data bases and simulations, recursion and list processing. In addition to programming and general Logo theory, students at the Institute must keep a journal of personal reflections to help them integrate what they've learned into their own curricula.

The program runs from July 1 to July 19, and costs $600. Fifteen Apple II series computers and six graphics printers are provided. If so desired, students can bring their own computers and software with them.

COMPUTENNIS, ANYONE?

When John McEnroe loses to anyone other than Ivan Lendl, something's very wrong. It took Sports Software's CT120 CompuTennis Scorer to figure out just what happened when Johnny Mac was aced by Sweden's Henrik Sundstrom in their Davis Cup match. Sundstrom won 62 percent of his own second serve points to McEnroe's 54 percent, but it was Mac's old nemesis that really did him in: clay. According to the CT120 statistical analysis, clay is the reason McEnroe has never won the French Open; in fact, on clay, the world's number one racquet-man falters in almost every statistical category.

"The top players are interested in our stats when they lose," says Steve Abramson of Sports Software, which tested its CompuTennis System at the Davis Cup. "John came



by and checked the printout after the match. Dennis Ralston, Chris Evert's coach, was particularly interested when we showed him that her win-error ratio is much higher at the net. The fact that they are at all interested in statistical data might be, in part, why they're so good."

The CT120 has infiltrated the TV booths of all the networks as well as at ESPN. Abramson describes it as a "dedicated data collection device that has enough memory to store a long five-set match and print out the data." Bundled with an RX-80 printer, it sells for $2325.

"In reality, how much can you help a McEnroe or Evert?" Abramson asks. With this comment, he proceeds to list a number of major universities that have bought the CT120 — Stanford, UCLA, USC, SMU — and explains that stats can better benefit the 50th-best player on the tour, the junior player, and the proficient college player. Tennis clubs are also beginning to show interest in the CT120. "It's a good way for the club pro to make some extra money," Abramson adds.

Have any of the top-ranked pros bought Sports Software's pitch? "Are you kidding?" Abramson says. "They expect it to be given to them. They don't pay for anything."

APPRECIATING ACCOLADE

"The Supernatural Side of David Crane" — one of Activision's founding fathers — was well-documented in the March *EG*, but how much do we know about the three other game designers who formed Activision? Not much. Larry (*Kaboom*) Kaplan left the company in 1982, and more recently Al (*Tennis*) Miller and Bob (*Stampede*) Whitehead exited to join forces with former Androbot president Tom Frisina and start-up the entertainment software company, Accolade.

"I promise you we won't be just another company," says Frisina. "We aren't planning to offer a vast library, but each product will feature the best graphic and musical capabilities available. They'll have very real scenarios, a movie-like quality." Four games (for the Apple II series and C-64/128) are in development and should be ready for release in September. Frisina describes three of the games as "a western, an interplanetary adventure and a romantic parody." He wouldn't discuss the fourth or any aspects of the other three. Similarly, Miller and Woodhead preferred not to talk about their experiences at Activision.

Frisina, however, was effusive when asked to explain the failure of Androbot, his and Nolan Bushnell's personal robot company that was sold to Sysorex International a year ago and is again up for sale. "We hyped ourselves out of existence," he concedes. "Nolan and I had different ideas of what Androbot should've been doing and ended up doing. For instance, Fred [the robot] was my idea. Nolan detested it because he felt it didn't do anything. Originally, we wanted to sell Fred for $295, but it cost us that much to build one. We had 50,000 orders, yet we hired an inexperienced engineering team that couldn't do anything cost-effectively. We burned through millions of dollars on R & D. I'll never let that happen again."

About Bushnell's latest venture, electronic pets (see "Bushnell's Pet Project," *CE*, May), Frisina asks, "Is there a market? Can he sell it? Can he finance it? Is it just another hype?" His answer: "I don't think Nolan will be able to finance it." Is there a market for Accolade? We'll see in September. CE

DIRECTORY

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916-966-9456

CANADA
Johnny Zee's Family Fun Center
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Victoria, B.C.
Canada, V9A 5W6
604-721-2243

Celebrity Fun Center II
1018 102nd Ave.
Dawson Creek, B.C.
Canada VIG 2B8
604-782-4371

COLORADO
Celebrity Sports Center
888 South Colorado Blvd.
Denver, Colorado 80222
303-757-3321

GEORGIA
Fun Factory
Valdosta Mall
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Valdosta, GA 31601
912-247-8322

HAWAII
Fernandez Fun Factory
Pearl Ridge Shopping Center
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Honolulu, HI 96701
808-487-2449

Fernandez Fun Factory
Waianae Mall
86120 Farrington Highway
Waianae, HI 96792
808-696-3356

Fernandez Fun Factory
Waiakea Kai Shopping Plaza
88 Kanoelehua Ave.
Hilo, HI 96720
808-935-3444

Fernandez Fun Factory
Kuapa Kai Center
377 Keahole St.
Honolulu, HI 96825
808-395-9359

Fernandez Fun Factory
Waipouli Town Center
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Kapaa, Kauai 96746
808-822-3660

ILLINOIS
Video Wizard
204 Roosevelt Road
Villa Park, Illinois 60181
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Fun Factory
Eastland Mall
1615 East Empire
Bloomington, IL 61701
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KANSAS
The Grand Prix
2919 West 13th
Wichita, KS 67203
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MISSOURI
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NEW JERSEY
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North Bergen, NJ 07407
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OKLAHOMA
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TEXAS
Games Galore
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College Station, TX 77840
409-693-7711
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THE 1986 GUINNESS BOOK OF WORLD RECORDS has requested the results of this tournament for publication.

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June 28-30 1985

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These three manufacturers have selected the following games (or game systems) in the 1985 Video Game Masters Tournament to raise money for Ethopia and the drought-stricken nations of Africa through CARE, the international relief and development agency.

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Line Feed

Domestic and Foreign Correspondence

The Atari 800XL computer

WHITHER ATARI?

I own an Atari home computer. I bought it primarily because of its price and the broad selection of software, especially games, available. A survey you made recently revealed that the majority of micro software purchased was entertainment-oriented. Most of mine is.

I know Atari Inc. has gone through some uncertain times since its acquisition by Jack Tramiel, and that there has been a reluctance on the part of third-party software designers to release Atari translations. Is this the general consensus — have sales of Atari products fallen that drastically?

Rather than waiting for Atari to right itself alone, the software manufacturers can help their own cause by supporting Atari's comeback. According to recent sales figures, Atari sales have reached parity with their main competition since the price reductions late last year.

I believe Tramiel's commitments and leadership plus a new market of Atari computers and the continued loyalty of old owners should be encouraging a reversal of this trend.

Vernon Espiritu
No. Hollywood, CA

Ed: There is some doubt about how strongly Atari will support the older machines, and as yet there is no new Atari computer on the market. As a result, software manufacturers hesitate to invest the great deal of time and money necessary to develop Atari translations for their programs, not to mention producing Atari-dedicated software. When the company demonstrates its solidity and finally brings out its much-anticipated new computers, the picture may change.

I congratulate you on your review of the Atari 800XL. I am an avid Atari fan and owner and have been one for nearly five years. The Atari is the most powerful computer in the low-end market, but magazines have always been biased against it. I hope that your article will help to dispel the myth that Ataris aren't very powerful. They are.

Jeff Naiman
Woodbridge, CT

PROGRESS AGAINST PIRACY

I have read in your magazine about the problem of software piracy. Recently, I ran across a program from Broderbund called *Print Shop* which is not a game, but is a very creative program. Broderbund has a good idea, which may help alleviate the piracy problem. They allow the user to make one backup of the program. I think this is great, because if something happens to the original, you don't lose out. When I spend a lot for a program, I want a back-up in case something goes wrong. If other software companies would allow you the same option, they might stop piracy.

THE PRINT SHOP (BRODERBUND)

No name given
Mason City, IO

DISK CHATTER

I disagree with Michael Brown, who wrote in "Q&A" that Commodore disk-drive chatter is harmless (April). C-64 drives almost always go out of alignment within a year, due to copy protection schemes that have disk errors. That "chatter" is actually the head banging itself forcefully against the stop, and knocking the cam out of alignment. This is due to a design flaw by Commodore and the use of disk-damaging copy protections. I either use only unprotected programs, unprotect the programs myself, or just use something else.

Brax Sisco
Bardstown, KY

A FRIENDLY SUGGESTION

I've just received your May issue, and I think it's great. However, I don't know about your choice to go from video games to computers. Being a video game fan, I think it's unfair to go on talking about computers and not video games. Atari may continue making the 5200, GCE may bring back their Vectrex (or so I hear), and the ColecoVision system shows no sign of being phased out. Video games aren't dead yet! And, I hear IBM quit production on its PCjr. True?

I like the magazine: it's a work of art. But what about video games?

Erik Bolog
Orlando, FL

Ed: If new and exciting video (or arcade) games come out, we'll be happy to report on them. But almost all the new electronic entertainments are now being designed for computers. And yes, the PCjr is dead; check this issue for details and our analysis.

INTELLIVISION LIVES?

I read with interest your recent article stating, "The Intellivision is a dead system, hardware and software being virtually impossible to locate." I know how Mark Twain must have felt when he cabled the Associated Press from London in 1897 saying, "The reports of my death are greatly exaggerated."

A substantial portion of the Intellivision product line continues to be manufactured, marketed and sold throughout the world. For the "Electronic England" customer, our product is distributed in the United Kingdom through: Mastergames Ltd., 31/32 High Street, High Wycombe, Buckinghamshire HP11 2AQ.

Just for informational purposes, Intellivision just completed a production run of almost 4,000,000 Intellivision and Intellivision-related titles and plans on continuing to do so for some time to come.

Terrence E. Valesk
Chief Executive Officer
INTV Corporation
Torrance, CA

MSX-TASY

As Bounty Bob might say, "Yahoo! Here come the MSXs." My sentiments exactly. In your article "MSX: Japan's Computer Gambit" (April), you asked the questions: Do the people who don't yet have a computer want one? Is good entertainment software enough to sell a low-priced machine? My answers are yes, and definitely yes.

Collecting dust around my house are an Atari 2600 and 400 home computer. I also have a ColecoVision (but it doesn't collect dust because I'm always playing it). I have hesitated to buy an Apple or IBM for one reason: price. Well, with the number of companies in the MSX market, I can only hope for (and predict) an all-out price war that will have the MSXs available, virtually complete, for around $200.

So come on Pioneer, Yamaha, Spectravideo, et al. I'm all for "buying American," but I'm also interested in buying what I need and can afford. Bring on the MSXs, and (if the graphics are "like the Adam" as your article stated) I'm sure to buy one. One other reason that I hesitated to buy an Apple or Commodore is that (I know mine is a minority opinion, but) I still think the graphics on my ColecoVision system are consistently better than I've seen on Apple or the C-64.

Richard S. Borden
Woodland Hills, CA

DESIGNER TIPS

In your article "Passport to Adventure" (December), you speak rather lavishly of the graphics in *King's Quest*. Some people find the picture-drawing itself entertaining, and I did too — so when I designed it, I left a feature in the game that slows down the drawing routines to look like an invisible artist painting a portrait before your very eyes.

"Control-v" toggles this Slow-Draw

mode on/off, and "q" will finish the picture in progress at regular speed.

This undocumented feature is actually a debugging tool I was using which stops the program at every instruction to run checks. I noticed this slowed down the drawing so I hooked it to the keyboard.

IBM didn't think Slow-Draw was worth adding to the documentation, but didn't mind if I left it in. I hope it adds to the pleasure of your Quest.

Charles Tingley
Studio City, CA

BAD SIGNS, HARD TIMES

Your magazine has been a consistant source of information in the gaming industry. For this I thank you. However, I must take exception with the Hotline article "Signs Of The Times II" (April). The actions of the four youths and Mr. Goetz have little relevance to computer entertainment.

It's a shame that your only intentional recognition of black youth had to focus on a small segment of the population. At one time you published the high scores acquired on various arcade games. The color of one's skin neither heightened nor diminished the accomplishment of doing something few could emulate.

Gaming is a sport. And like all sports, people of all ethnic groups participate. A magazine like yours could draw people together in the quest of enjoyment. Please don't diminish the fun with racism.

Name withheld by request

Ed: Not once in the article was the "color of one's skin" mentioned. According to the newspaper article quoted, the youths were planning to rip off arcade machines. That's news, not racism. We'll continue to list high scores in Bulletin Board.

AFTER THE DELUGE, US

Cheers to CE and John Holstrom ("Finder of Lost Arcades," May) for finally committing to print the very point we constantly strive to hammer home to the media, but which has heretofore gone unrecognized: The coin-op industry is far from withering and dying, but has settled into a stable level of profit-making.

No one ever expected that the 1980-81 boom could or would be sustained. Indeed, the overwhelming market response to the introduction of arcade video games was partially abetted by the corresponding hard luck of the recording and film industries, as well as the down-turn in the American economy which seriously eroded the consumer leisure budget.

Mr. Holstrom is also correct to point out the renewed interest in the second generation of video games which incorporate the latest computer technologies and provide players with higher resolution screen graphics and quicker response times. Stereo sound and sports themes have also changed the face of the video game, while interchangeable software cartridges allow the coin operator to prolong the market life of a game's hardware.

Glenn E. Braswell
American Amusement Machine Assoc.

BRUCE ARTWICK'S FLYING CIRCUS

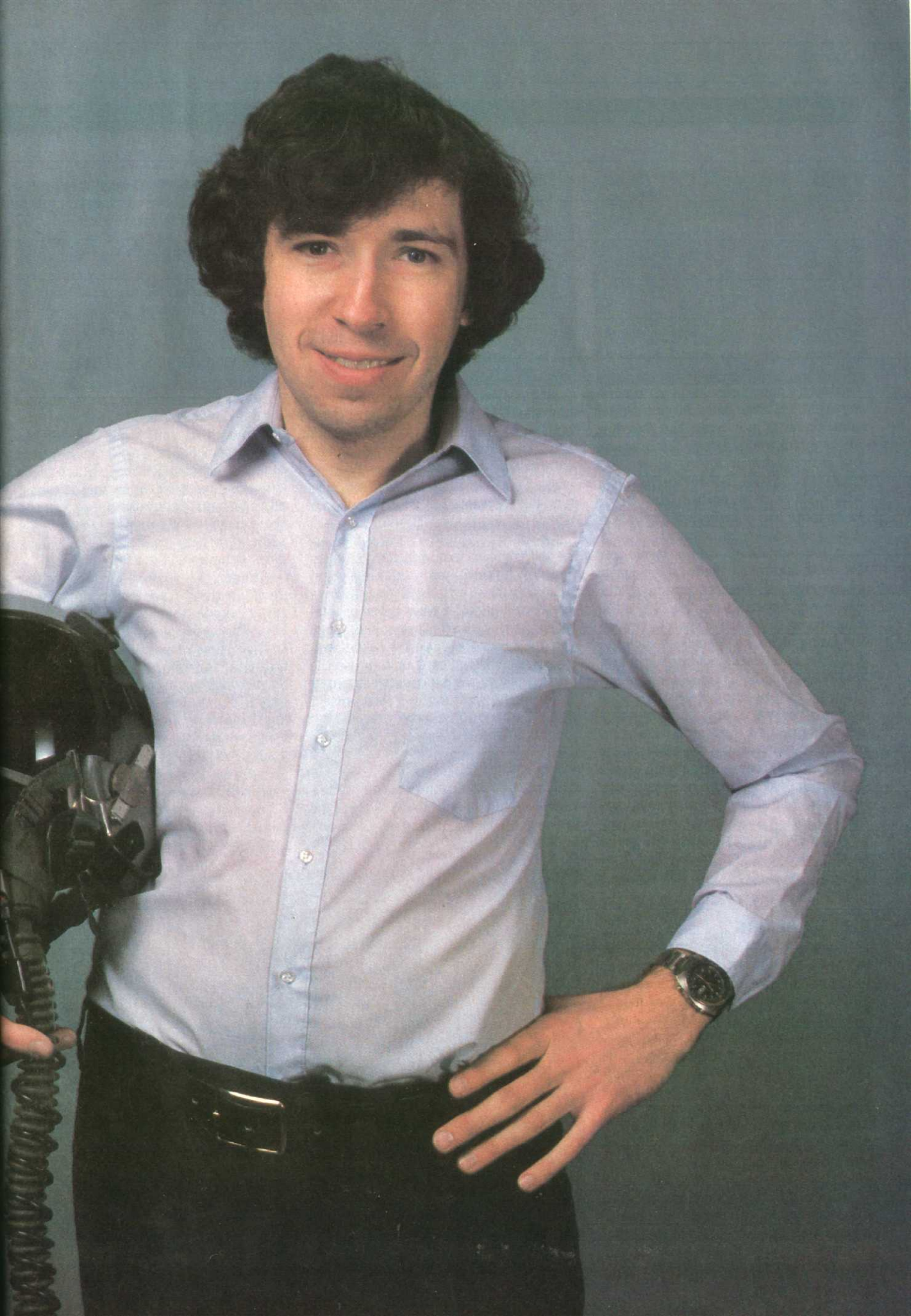
The Chuck Yeager of computer flight simulators comes up with — what else? — *Jet.*

By STEVE DITLEA

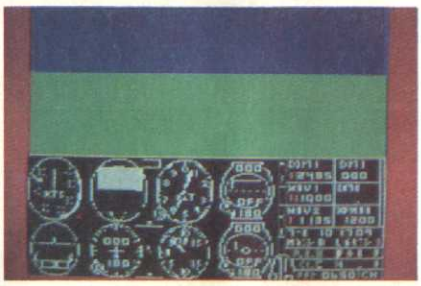
A funny thing happened to Bruce Artwick on the way to designing his highly-acclaimed *Flight Simulator* program: One morning he woke up, stepped outside into the yellowish Los Angeles air and discovered a piece of wreckage floating in his swimming pool. "It was scary," Artwick recalls. As he gazed at the shiny aluminum airplane part, Artwick presumably was overcome with this revelation: Simulated flight would be so much safer than actually steering a 747 along the flight path from Chicago's O'Hare to LAX. Three years after that date with destiny, in late 1979, Artwick unleashed the first of many flight simulators that he and partner Stuart Moment would write for personal computers. It took off . . .well, like a rocket.

Flight Simulator II, published by SubLOGIC (Artwick and Moment's own company) for Commodore, Atari and Apple computers, and *Flight Simulator*, published by Microsoft for the IBM PC (all versions, $49.95), create an experience so close to actually tooling a one-engine Cessna 182 or Piper Cherokee that veteran pilots as well as airborne novices have all gotten hooked on it. Space shuttler Sally Ride does it. So does actor John Travolta. Not to mention film director Brian DePalma. With these sophisticated programs, Artwick has defined state-of-the-art for realistic color, three-dimensional graphics. This unique combination of simulated flight and computer art — not even the best arcade flying game can compare to *Flight Simulator*'s illusory effects — has spurred sales of more than 800,000 copies. (One out of seven Apple II and one out of twelve IBM PC owners have copies.)

Flight Simulator in its various incarnations has occupied the top spot on *Billboard* magazine's best-seller chart of Top Computer Software for the better part of a year. By comparison, over on



BRUCE ARTWICK



The C-64 version of *Flight Simulator* puts you in the cockpit of a Piper Cherokee.

Billboard's pop music charts, no recording artist has ever had a hit perform as spectacularly; not even the Beatles, Michael Jackson or Bruce Springsteen. But Bruce Artwick doesn't resemble a rock star. Six-feet-three-inches tall, with a shock of wavy hair, this Bruce looks more like a basketball player who didn't quite make the varsity.

In the SubLOGIC offices located on the tenth floor of a cylindrical building in Champaign, IL (not surprisingly, the window in Artwick's office looks out at Champaign's Willard airport), reveals the steps in his company's confidential strategy, one which could result in professional-grade flight simulators on personal computers everywhere. Its stated goal: to release a line of high-quality graphics-oriented software. This summer the public will see the master plan for Artwick and company's Flying Circus begin to unfold with the release of two products: *Jet*, a fighter simulation, and *Project USA*, a package of scenery disks covering every major landing site in the United States. If you think *Flight Simulator* is an eyeful, wait till you see what's next.

FLIGHT PLANS

"We get a lot of suggestions for simulations," says Artwick. "People write in to say they'd like to see submarine or motorcycle or executive jet simulations. We had to decide what would be most interesting on a personal computer." These deliberations and the skills of SubLOGIC staff programmer Charles Guy have resulted in *Jet*, a spectacular flight simulation of General Dynamics F-16 land-based and Northrup F-18 carrier-based jet fighters, capable of hitting Mach 2 — twice the speed of sound — which is written for the IBM PC.

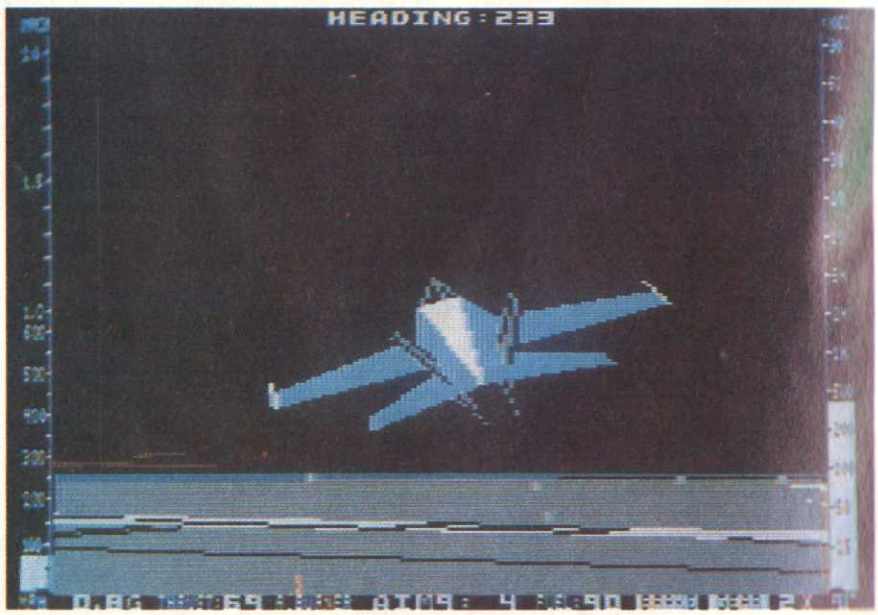
Anyone who has tried *Flight Simulator* will find *Jet* as different as. . .well, a single-engine prop plane is from the most advanced piloted weaponry in the U.S. arsenal. According to programmer Guy, "Some people may argue that the F-15 is our finest aircraft, but both the F-16 and the F-18 have been remarkably successful in development, easy to fly, with good maintenance records. The F-18 has inferior flight qualities, but we wanted to give the option of taking off and landing at sea."

Jet will surely be the nearest most of us will come to experiencing the outer edge of the envelope — the legendary place only those with the Right Stuff ever live to tell about. Flying ballistically at Mach 2 with your afterburner scorching, you get a rocket's-eye view of the stratosphere. And you can't quite grasp the significance of the exponential altimeter scale on the right side of your cockpit display until the first time you go from ground level to 10,000 feet in under 10 seconds.

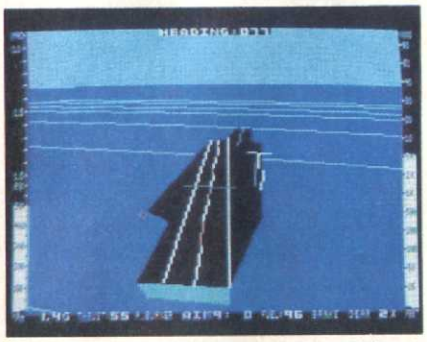
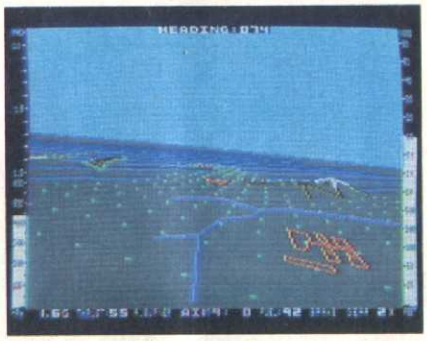
There are no dials or analog displays in the cockpit. All of the instruments are represented as numbers, letters or scales in the heads-up display — used to minimize reaction time in high-speed flight environments. You know this simulation means business when you spot in the bottom left hand corner a "G" measurement, noting the acceleration perpendicular to the wing or "frame loading." As *Jet*'s documentation notes matter-of-factly: "If frame loading exceeds 9G's the pilot will black out due to blood draining from the head. If frame loading goes below minus-3G's the pilot will red out due to blood rushing to the head."

For all their awesome power, the real F-16 Flying Falcon and F-18 Hornet handle smooth as silk, thanks to "fly-by-wire" avionics. The pilot's controls send steering commands to a computer which *actually* moves elevators and ailerons; all a pilot has to do is point the aircraft and the computer will continue to fly it in the same direction. SubLOGIC's *Jet* program behaves in the same manner.

Among the features making their debut in the *Jet* simulator is "control-tower" mode, toggled by tapping the C key. This mode gives you a flight controller's view of your craft, perfect for following aerobatics and dogfights. Should you eject from your plane by hitting E, according to the documentation, "the view will track your body as it flies from the canopy and you can watch yourself as the parachute opens and you float to the ground." Another mode of note is the "target strike" option for the F-18 fighter, in which your targets are Soviet cruisers defended by missile launchers. The graphics here are among



Bruce Artwick's latest: *Jet* from SubLOGIC.

Flying is not all instrumentation; sometimes you can enjoy the scenery. At far left, a welcome sight for *Jet* pilots, the carrier *Nimitz*.

the most complicated in the program, with convincing models of cruisers rocked by a shock wave, followed by a particle explosion when hit. Survive this challenge and you still have to land on the deck of the aircraft carrier Nimitz, no mean feat in itself.

Though Charles Guy has never flown either F-16 or F-18 jets, he has seen enough film and video tape of both crafts to attest to *Jet*'s authenticity. At SubLOGIC, software designers are offered flying lessons as part of their job benefits; to date, only Guy has availed himself of the opportunity. He's quick to emphasize that *Jet* wouldn't have been possible without Bruce Artwick's ingenious graphics routines; both names are listed as the program's co-authors.

Also on SubLOGIC's itinerary for this summer is the long-awaited release of *Project USA*. Together these six-disk volumes, one for East and one for West (in IBM PC, Apple II, Atari and Commodore 64 formats), will offer a graphics database for the entire United States, including over 3000 airports, along with countless landmarks, rivers and urban areas. According to Artwick, "You'll be able to use the radar feature to zoom out and see the whole country."

Thanks to Artwick's foresight, the *Project USA* disks will be compatible with existing *Flight Simulators*. "There's an undocumented feature that not even Microsoft is aware of yet," he confides. "If you press a Control-E, *Flight Simulator* will pull in a scenery disk. We think a lot of *Flight Simulator* owners will buy the disks when they become available." The *Project USA* databases will also work with *Jet*. "You'll be able to fly across the entire country at Mach 2," Artwick adds.

TAKING OFF

The roots of the SubLOGIC Flying Circus can be traced to 1975 and the fortuitious meeting of Bruce Artwick and Stuart Moment, both of whom were attending the University of Illinois at Urbana-Champaign at the time. They happened to live in the same dorm — known as Gamma Ray Zappa — which primarily housed engineering and aviation students. Artwick, who would go on to write a master's thesis on 3-D flight simulation for minicomputers, was one of the former, Moment one of the latter.

"I made a deal with Stu," recalls Artwick. "If he would teach me to fly, I would teach him about digital electronics. He was my flight instructor for eight months." Artwick had problems initially, especially with learning to land. "I had one real close call," he says. "I came within a hundred feet of another plane. You could call it a near mid-air collision."

Stuart Moment, Artwick's partner and flight instructor.

Today, former flight-trainer Moment is Artwick's partner in SubLOGIC Corporation and the firm's chairman of the board. He provides the administrative and financial skills that let Artwick work on new product development. Had it not been for Moment's flying lessons, Artwick might never have gotten interested in designing software. "I'm basically a hardware guy," he explains.

Out of school in 1976, Artwick went to work in Los Angeles designing chips for Hughes Aircraft. During his stay, two mid-air collisions occurred near his house on the flight path to LAX, Los Angeles' International Airport. This, coupled with the swimming pool, was enough to ground Artwick for good; to this day he prefers to indulge his taste for speed and free flight by motorcycling on his two Yamaha bikes.

His stay in L.A. coincided with the era of the Altair and other pioneering personal computers. By then, Artwick was getting the urge to write graphics software for these new machines. While a student in Champaign, he had worked at the University of Illinois digital computer labs, designing sublogic circuits for mainframe computers. "One time I thought: what a neat name for a company, but everyone laughed." Artwick subsequently wrote an article for *Kilobaud Microcomputing* magazine on creating 3-D graphics, and used SubLOGIC as his company affiliation. In 1977, when he decided to go into business with Stu Moment, the name was a logical choice. *Continued on page 75*

A HORNET THAT DOESN'T FLY

The Navy's F/A-18 flight simulator — it's not just a job, it's a computer game.

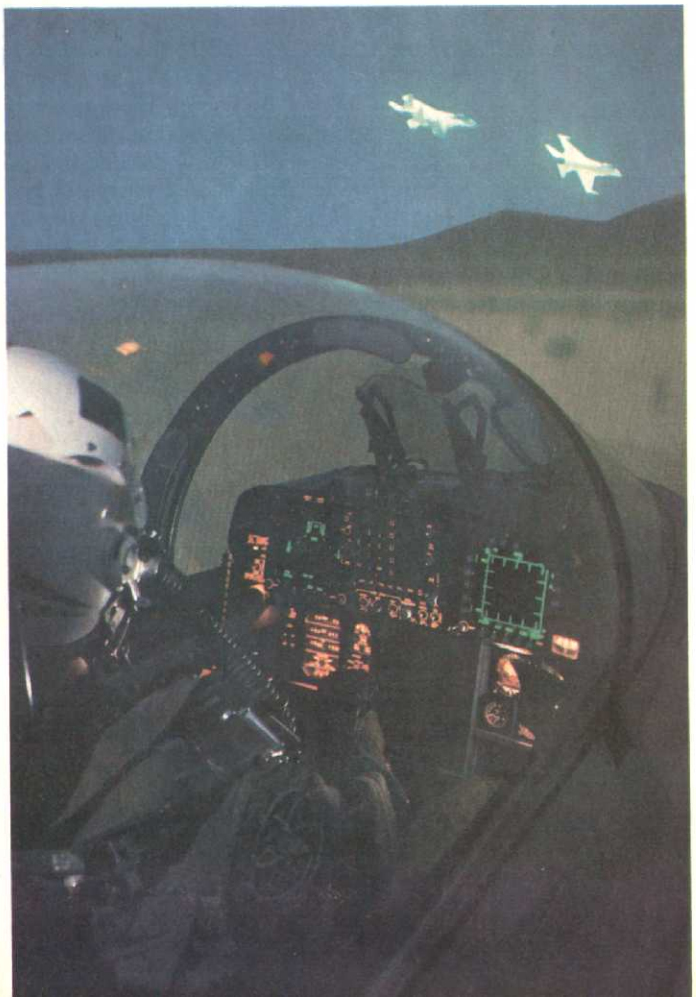
By BEN TEMPLIN

Perhaps the ultimate computer game — and one of the most expensive, at approximately $24 million — is Hughes Aircraft's F/A-18 Hornet Strike Fighter flight simulator. Combining an exact duplicate of the high-tech fighter's cockpit controls with high-resolution graphics, sound and environmental effects, this simulation is the closest a pilot will get to aerial combat without fighting in a real war.

At Naval and Marine bases in California, Florida, Australia, and Canada, pilots do battle in the air without ever leaving the ground. The three-dimensional real-time combat is projected on 40-foot diameter domes from cameras discreetly hidden on the sphere's surface. Instructors monitor a would-be pilot's performance from a separate computer center, where different tactical environments are created in

Continued on page 78

Bottom opposite: The realistic cockpit controls include the F/A-18's state-of-the-art radar, weapons system, and navigation computer. Middle, bottom left and below: The three-dimensional spherical mapping of real-time images allow Navy and Marine pilots from the United States, Canada, and Australia to conduct training maneuvers without wasting fuel or weapons. Top: The real F/A-18 Hornet Strike Fighter manufactured by McDonnell Aircraft Company, can fly at nearly twice the speed of sound and is armed with short-range heat-seeking Sidewinder missiles, long-range radar-guided Sparrows, and a 20-millimeter cannon.



MY COMPUTER PUT ME ON A DIET

Can the Boston Program keep you away from Heineken and Haagen-Dazs? I wasn't dying to find out.

By LINDSY VAN GELDER

Losing weight and staying thin is a perennial human obsession. Even Adam and Eve pigged out on fruit — and look where that got *them*.

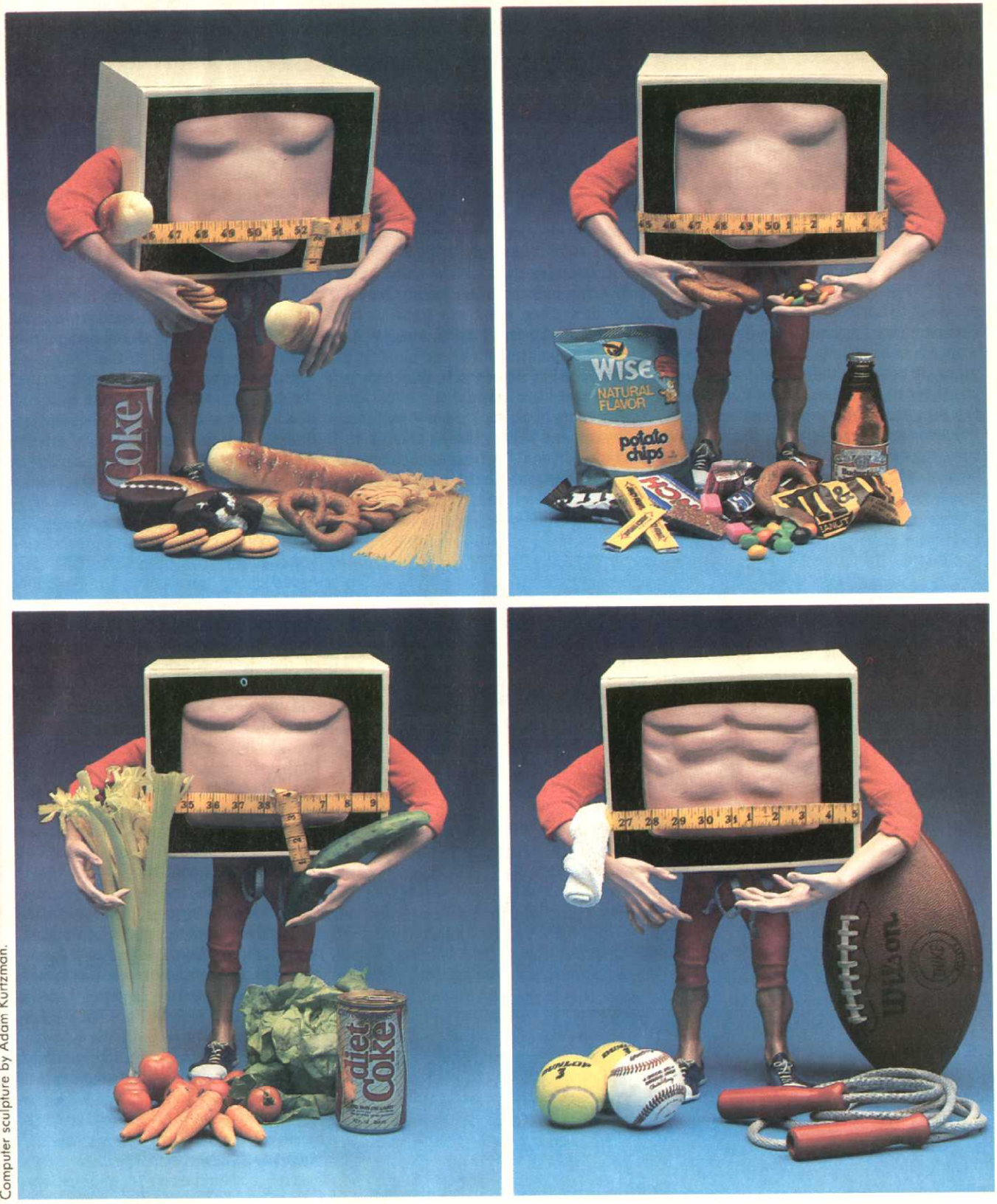
Today we have all sorts of electronic miracles to help us slim down, including scales that announce your weight in smug mechanical voices. So it really wasn't surprising when a software company decided to publish a diet program. Can a computer help you lose weight? Will software speed you on to a size 7 any faster than a personal workout coach? I decided to find out.

PROLOGUE:

The folks from Scarborough Software introduced *The Original Boston Computer Diet* (IBM PC/XT/jr, $79.95) at a press conference luncheon (dietetic, of course) at New York City's trendy Water Club. Even before looking at the program, I decided it was a stroke of marketing genius to come up with a product that has both the words "computer" and "diet" in its title. (If it helped Yuppies lose weight, it would be a shoo-in for Program of the Eighties.)

Actually, the program is the joint brainchild of Scarborough (best known for its typing teacher *MasterType*) and Nutrition Management, a Boston-based chain of diet clinics. There were execs from both firms at the press conference, all extolling how the program supposedly turns your computer into a "diet therapist." I heard a lot of that new software buzzphrase, "artificial intelligence." In fact, one of the programmers, Nutrition Management staff member and Harvard Medical School psychiatry instructor Isaac Greenberg, went so far as to tell the assembled press that in some ways, the computer is *better* than a human diet therapist. "A little-known secret is that lots of people drop out of diet programs because they're embarrassed when they don't lose weight," he explains. "On the computer, you can do poorly and not give up."

I'm skeptical, but it's a free lunch. I had seconds on the salmon mousse.

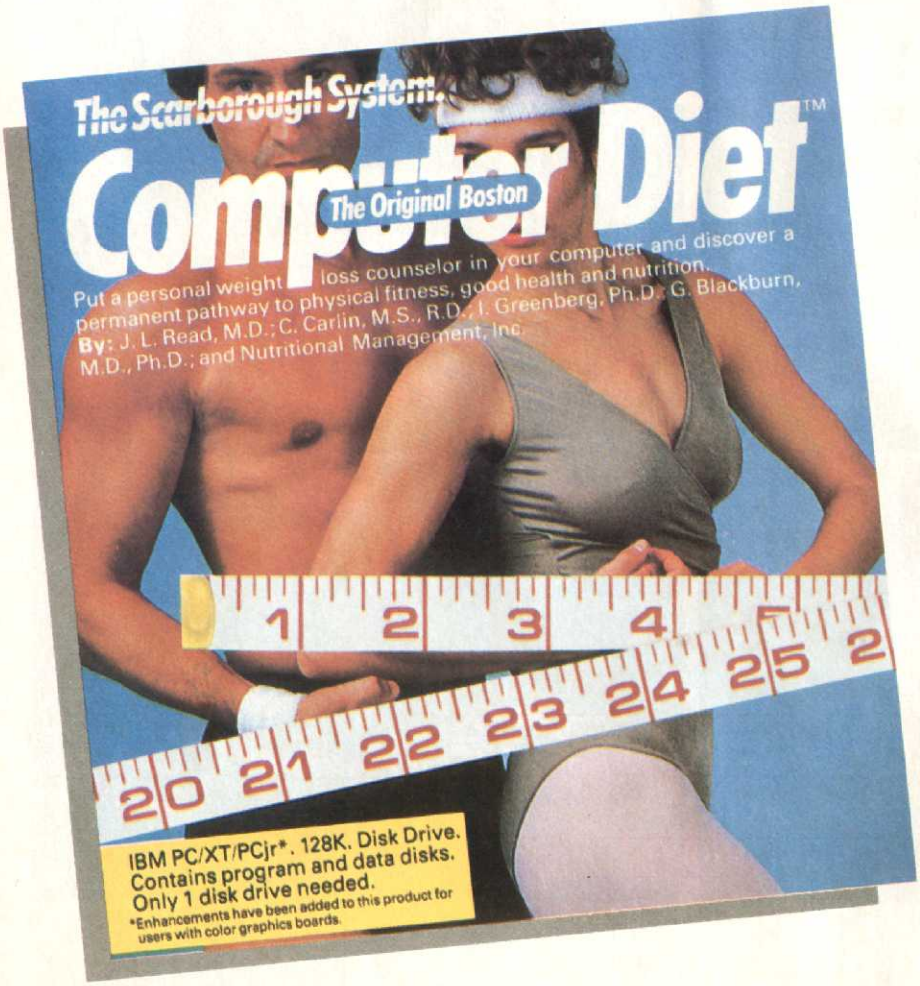


Computer sculpture by Adam Kurtzman.

MY COMPUTER PUT ME ON A DIET

DAY 1:

I slip one of the two program disks into my drive and I'm immediately congratulated for my astounding technical cleverness. "You have successfully booted THE ORIGINAL BOSTON COMPUTER DIET. Welcome aboard!. . .My name is Shirley and I am one of the counselors here." Shirley explains that I actually have the choice of three different counselors: herself, whom she describes as "free-wheeling"; George, who's "a little on the stern side"; and Amy, "a really sweet kid" who "will take pains not to hurt your feelings." I nix the Nazi and the wimp and stick with Shirley, who proceeds to help me install the program (a breeze) and to interview me about my medical background: whether I'm pregnant or anorexic, and whether I've ever suffered from high blood pressure, hypoglycemia, anemia, gout, and a host of other problems. (Since I do say that I was once anemic, Shirley offers to write a letter to my doctor — a sop, no doubt, to Scarborough's legal department, but a good idea all the same.) She also grills me about my eating habits, from how often I eat out to what my favorite snacks are. Finally, she has me make an appointment to "see" her again tomorrow. I'm supposed to read a chapter in the little paperback nutrition-information book that comes with the software, and Shirley insists that it's important for me "to make a concrete statement" about whether or not I'll do my homework. I find this element unpleasantly *est*-ian, but I agree.

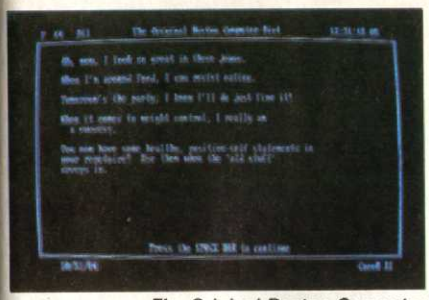


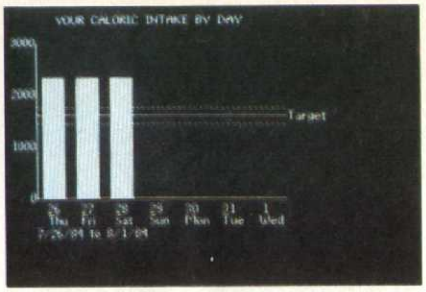
DAY 2:

Logging on, I'm asked to type in the date and the time. Although my computer has a built-in clock/calendar, the program apparently can't access it automatically. I'm a few hours past the time of my appointment. "Tsk. Tsk," Shirley scolds. "We are a little late today, aren't we?" Since the program doesn't know how to tell time, I realize I could have just lied.

Our session begins with a little quiz about my homework — which turned out to be basically an introduction to the program. (The other chapters in the manual seem either to deal with specific parts of the program, with the different elements of a nutritious diet — calcium, carbohydrates, proteins, and so on — or with diet problems, such as how to survive at social occasions. There's nothing in here that will be news to anyone who's ever gone on a diet before, but it seems sensible and clear enough.) Shirley's done some homework, too. She tells me, based on my answers to the questions she asked me yesteryday, that I eat too much fat. For this I didn't need a computer, but it's nice to know the program is on the right track. Shirley also thinks I drink too much — four beers a week — and gives me a little temperance lecture. (Aside from adding calories, she reminds me, alcohol may make me throw caution to the winds and pig out.) I find myself wondering if I'd be better off with Counselor Amy. Checking the manual, it seems that switching counselors in mid-diet is possible, but I decide to give Shirley another chance.

According to the manual, I'm supposed to figure out my "ideal weight" by telling the computer my height and my frame size. The height is a snap, although for some arcane reason you're supposed to tell the computer how tall you are when wearing one-inch heels. The frame size turns out to be (literally) a major pain: "To make an approximation of your frame size, extend your arm and bend the forearm upward at a 90 degree angle. Keep fingers straight and turn the inside of your wrist toward your body. If you have a caliper, use it to measure the space between the two prominent bones on either side of your elbow. Without a





***The Original Boston Computer Diet* provides everything from your own therapist to a little graphic encouragement.**

caliper" — hey, doesn't every household keep one in the kitchen drawer? — "place thumb and index finger of your other hand on these two bones. Measure the space between your fingers against a ruler or tape measure." Then you compare your "elbow width" with a table thoughtfully supplied in the manual. The problem was that even with help from two other people, I couldn't get the measurement right. I decide to go with "small." I make another appointment and agree to read another chapter of the manual.

DAY 3:

Shirley greets me warmly — in fact, she tells me that my arrival is the high point of her day. I'm a little early this time, but Shirley assures me that that's fine — in fact, she'll get to her tennis game that much sooner.

She and I agree that I'll try to lose 20 pounds. Naturally, I want to lose it yesterday — but when I try to set a goal of five pounds a week, Shirley balks. Apparently, no one is allowed to lose more than two pounds a week or to eat fewer than 1000 calories a day. (According to my 14-year-old daughter, the diet is also rigged to reject any users who admit to being under 18. These programmers emphatically do *not* want to be sued.) I reluctantly agree to lose two pounds a week.

Then Shirley shows me around what appears to be the heart of the program — the food reporting system. Essentially, you have to make a computer record of every morsel that passes your lips. Luckily, it's quite easy — all you do is type in the name of the food, and if it's in the program's extensive data base, you press a few keys, and it's automatically entered. When you tell the program the size of your portion, the exact calorie count is also registered.

With the press of a function key, you can also find out how many calories you've eaten so far during a particular day. This is terrific: you can enter all your data after dinner and get an instant read-out of how many calories you can consume for your late-night snack. All the foods in the data base are categorized as protein, fat, sweets, fruit, vegetable, starch, or low calorie. With a few easy keystrokes, you can get a list of, say, all the high-protein foods in the data base; with a few more keystrokes, you could find out what size portion you should eat if you wanted to consume 100 calories of a high protein food.

Unfortunately, virtually no morsel that ever passes my particular lips turns out to be in the data base program — a surprise, considering the boasts of the Scarborough people at the press conference that the program includes over 90 per cent of the most commonly eaten foods in America. Then it occurs to me: Do all those apple-pie-and-Velveeta Americans out there have computers? No. The computer-buying public is overrepresented by Yuppies, Gourmet Food Snobs, and other disposable income types. *The Original Boston Computer Diet* has heard of kiwi, croissants, and Brie, but it doesn't recognize such Food Snob staples as sushi, eggs Benedict, fettucine alfredo, moo shoo pork, escargots, or sea urchin. Happily, it does let you add foods to its data base, and — assuming that you know how many calories are in a sea urchin — it's easy.

Actually, the whole program is incredibly easy to use. Scarborough packages a handy dandy little card to tell you what keys you press to select food, portions, and so on, but you really don't need it — all the information is on your screen or accessible with a help key.

DAY 4:

Up until today, I've been using the program on my IBM-PC, since it's hooked up to my printer, and I've wanted to get a printed record of my sessions. At various times, *The Original Boston Computer Diet* has told me to "turn on my graphics monitor." Since my PC has the standard monochrome monitor, I've sat there twiddling my thumbs, waiting for the program to continue. Today I used my PCjr, which of course has a graphics monitor — and I can't believe what I've been missing. This program has more charts and graphs than Baskin-

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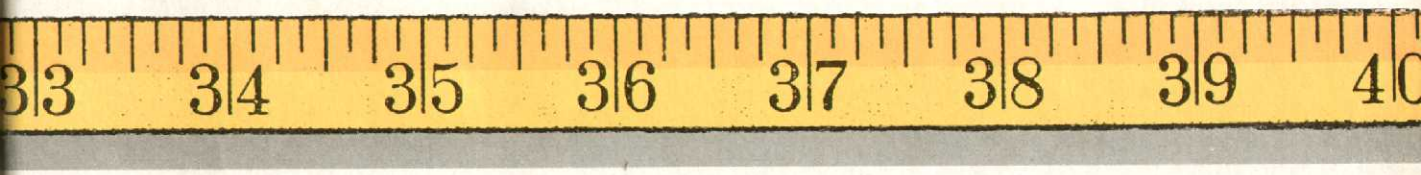


The PCjr: Requiem for a Lightweight

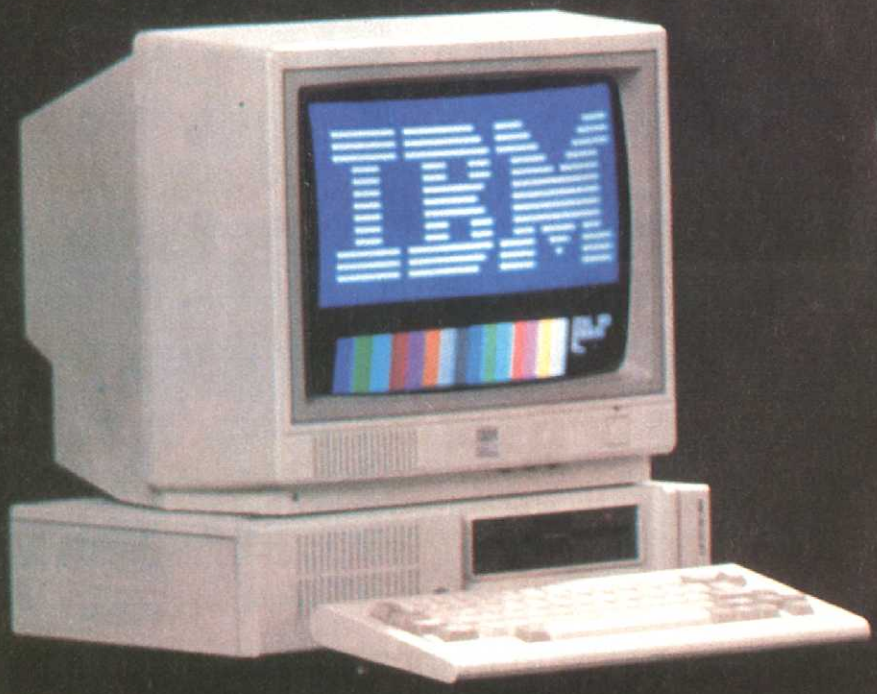
We all know who killed the PCjr — and it wasn't Cock Robin. But what were IBM's motives for dropping their *enfant terrible*?

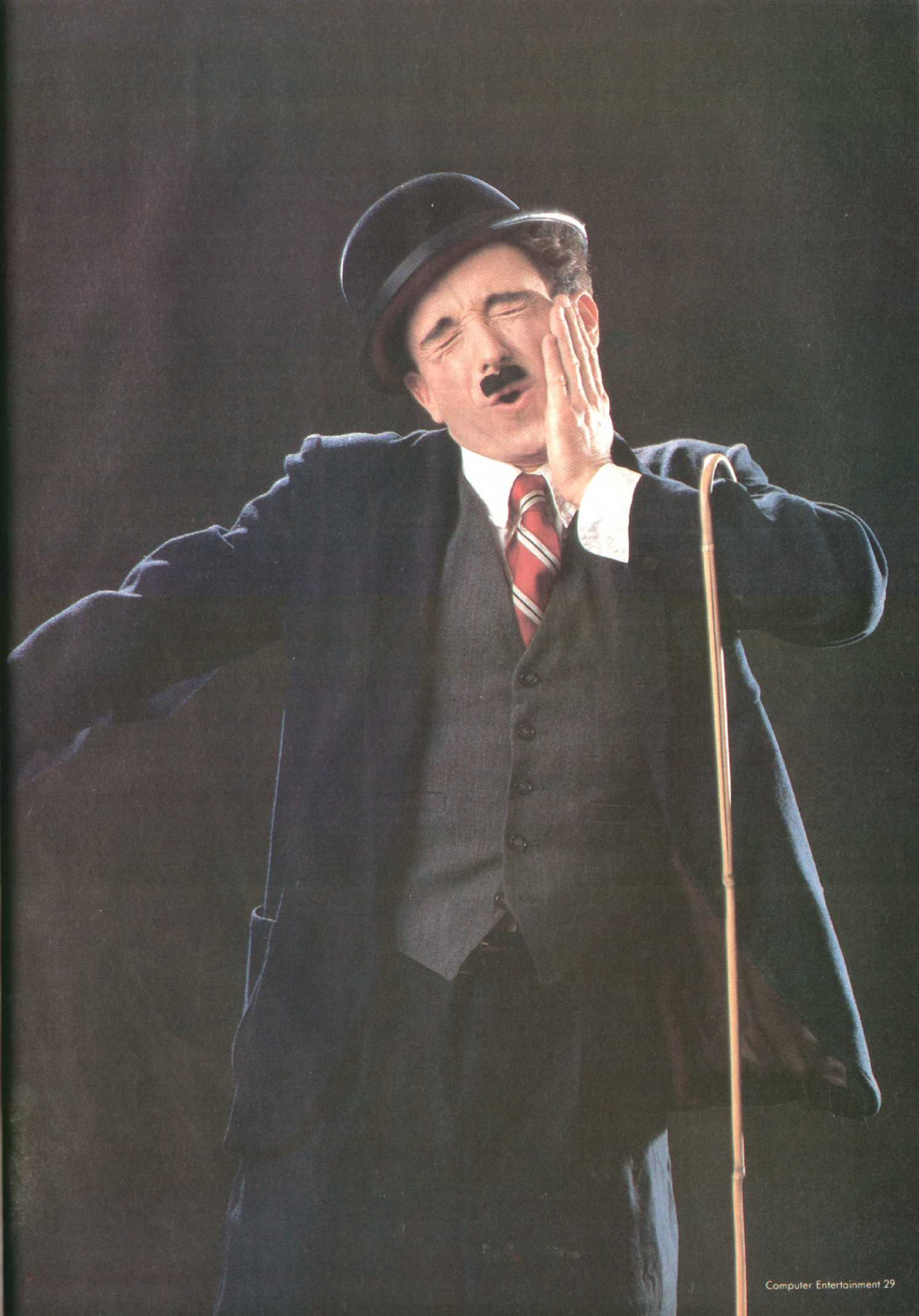
By MARTIN PORTER

Being present when history is made and being part of history in the making are two different things. But anyone who participated in the making and unmaking of the IBM PCjr during the sixteen months it languished on the market, can claim his own slice of microcomputer fame.

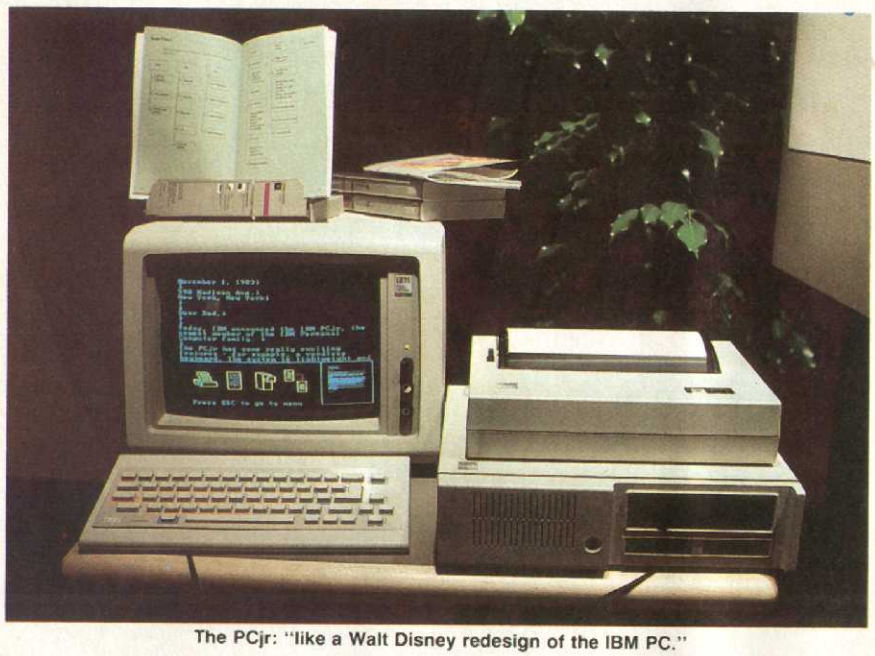
Fame is probably the wrong word. Folly is more like it. For if the launching and sinking of the microcomputer business' first Edsel was anything, it was nothing any home computer owner would openly admit supporting.

But this was far from the mood that pervaded the basement galleries of the IBM New York Headquarters on 57th Street on that fateful morning in November 1983 when jr was introduced. At the bottom of a swooping staircase, which usually displays the artful riches of a company whose initials virtually define data processing, was a throng of reporters and analysts, held back by a velvet rope. Everyone was finally admitted en masse to a back room full of the cute new micros — like a Walt Disney redesign of the IBM PC — with a single half-height





Requiem for a Lightweight



The PCjr: "like a Walt Disney redesign of the IBM PC."

disk drive, two ROM cartridge ports and a Buck Rogers keyboard that sprayed its signals at the CPU through thin air.

For game players it promised to be a memorable occasion. The PC had its fair share of game software, but it was far from a game player's dream machine. The color graphics capability was poor. There was no audio chip. It was a machine more attuned to spreadsheets than gaming. The "new" PCjr solved these shortcomings and promised gamers a designer label for their joystick jockeying.

Despite this opportunity for fun and games, I did the first thing every reporter in that room did once they got their hands on the machine. I typed. I don't remember what I wrote and, judging by the ultimate fate of the machine, history isn't missing much by the omission. Suffice it to say that I tickled the ivories the same way I normally do every day at my office PC. Well — not exactly the same way.

For there was one glaring problem with those keys. It felt like you were typing on a toy. Moreover, those stubby white buttons were slippery, they cut my typing speed in half, and they camouflaged the number keys which I — admittedly — still have to look at while typing. Imagine what it would do to my digital dexterity during game play.

In the hysteria of the moment, however, this was all lost in the success story everyone was certain was about to unfold. IBM had dignified the home computer marketplace, and, at least by implication, entertainment applications, with its presence.

It was easy to fall for the PCjr when it was first released. And, by the time jr parts were finally junked in April, there were probably about 325,000 of us jr owners out there.

Even Sierra On-Line founder and president Ken Williams was taken in by the jr's debut. On Wednesday, November 2, 1983 (the day after the jr was announced), he told *The New York Times* that programmers are usually reluctant to write software for home computer makers whose staying power in the industry is often in doubt. "But the PCjr," the article quoted Williams as saying, "is bound to be around for a while." Nice call, Ken.

Don't dump on Williams, though. He wasn't alone. He was just one of many to be absorbed by the thought that was pervasive during the fall of 1983: that IBM could do no wrong in the micro marketplace.

Even before the jr was the jr, at a time when it was code-named the Peanut, there were already three magazines devoted to the as-of-then unannounced machine. Spinnaker Software had a warehouse of its games on ROM cartridges ready to be shipped. Meanwhile, book publishers proudly displayed book jackets for Peanut books at the booksellers convention, and any writer who had ever written about home machines was already signed to pen yet another one about the Peanut.

The logic behind this mania was simple: The companies that had jumped on the success of the PC early and fast were wallowing in millions. Board manufacturers who plundered the first PCs off the line, to expand upon its "open architecture," were raking in the bucks.

I should have known something was wrong right away. One day after the PCjr announcement, I called my dealer to put my name on a waiting list for the machine, recalling the six-week delays and waiting lists that had accompanied my original IBM PC order. There wasn't much of a wait. The dealer uncomfortably acknowledged that there really hadn't been many orders. At $1250 a pop, the machine was steep by home computer standards and, of course, there was the problem with the keyboard, he explained.

I paid the price. I ignored the keyboard. And I took my place in history.

After all, the machine actually fit my needs. It ran my PC version of *Wordstar* (albeit poorly) and could be bundled in a perfect compromise for a small businessman who couldn't afford a second PC or Compaq but wanted to take his micro on the road.

Unfortunately, it couldn't run *Lode Runner*.

Yes, at the time of the PCjr release I was hooked on this straightforward climb-and-chase game. And my first encounter with the limitations of the machine took place when I slid my favorite floppy into the single disk drive and ...nothing happened. A phone call to Broderbund revealed that a jr version was forthcoming. It forthcame. . .about ten months later.

Broderbund president Doug Carlston now explains the problem: "The jr was a failure from the day it was introduced. It was impossible to get people to write programs for it."

But if anything can be blamed for getting the jr off on the wrong footing it was that damned keyboard. Every writer who wrote about the new machine began his criticism with the fact that typing on the machine was a hateful experience. IBM should have anticipated such a response before launching its first home machine with such an ergonomic kludge.

The truth of the matter was that IBM had made more of a marketing error than an ergonomic flub. Big Blue forgot that the people who make or break product reputations tend, by the nature of their profession, to type like a steno pool on fire. Every computer reviewer's first impression of any new machine is based

on that vital keyboard interface. And, if the machine doesn't feel right to someone who can probably hit 50 wps, it is not going to get a good review in the computer press.

The PCjr got plenty of bad reviews. And predictably, it was the keyboard that shot the product full of holes in print. Nobody cared that IBM promised a slew of new games with keyboard overlays that could only be accommodated by the chiclet design. The keyboard typed poorly. Moreover, the keyboard made the computer look like a toy. Even the toy manufacturer Coleco realized that nobody wanted a computer to look like a toy — no matter how much of a toy it might actually be.

To understand the logic behind the PCjr's infamous key assemblage, I made a visit down south to IBM PC headquarters in Boca Raton. The site was IBM's ergonomic laboratory where the PCjr had been exhaustively tested before it ever made its way off the drawing board. It was here that IBM also perfected its first ($50) joystick which was released to complement the game-playing promise of the PCjr.

Here were lab-coated scientists, dedicated to enriching the human/computer interface, demanding that the PCjr keyboard wasn't as "unergonomic" as people claimed. And besides, I was reminded, every computer is a compromise between utility, technology, and marketing.

Was this what happened to the jr? Was it the ultimate compromise between these three, usually divergent, interests? Probably. But don't negate the all-too-powerful influence of a fourth factor — positioning.

To explain the positioning problem, let's visit the plush digs of New York's Plaza Hotel, where computer analyst Howard Anderson of Boston's Yankee Group was presenting a first look at IBM's PCjr strategy to the money men of Wall St. "One thing you have to know about IBM," he said, "is that it is always afraid of threats from below." Companies often function like medieval villages. They create barricades around their product line and are ever vigilant of intruders at any point in their defense wall.

For a company like IBM there is only one area that is really important—the big mainframe, workhorse computers. It was to protect the office domain from the Apples and Radio Shacks of the world that the IBM PC was introduced in the first place — as a quicky, off-the-shelf product that the company could roll out the door and into the stores in just one year. With this front shored up there remained only one Achilles heel in the company's armament — the home.

IBM didn't want some sixth grader's first exposure to computing at school or at home to come on any machine but an IBM. After all, someday that kid might grow up and go off to college where he'd

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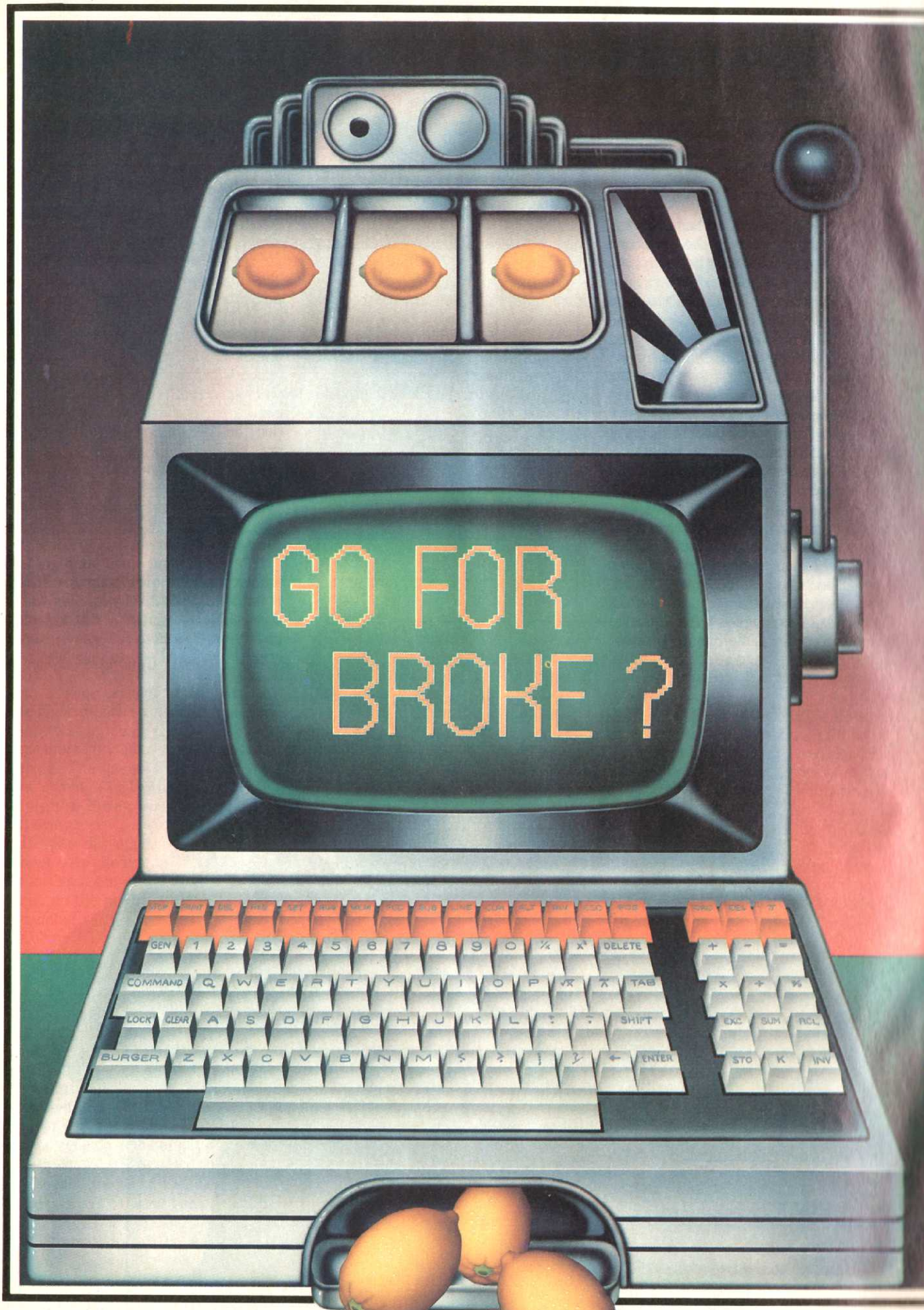
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Do Gambling Programs Crap Out?

From blackjack to the horses, if you can think of a way to bet your money, chances are someone's figured out how to get it on a computer.

By DON KENNEDY

You sit there only vaguely aware of the noise, the glitz and the glitter of the hectic casino floor behind you. You barely notice the glint of light off the diamond in the dealer's pinky ring. Slowly, confidently, you glide your chips forward across the baize table, matching the already large bet you placed. You're splitting a pair of aces.

You notice the appreciative murmurs of the other gamblers at your table as the dealer gives you a face card on each ace. Two blackjacks. Two more winners. You tip the dealer. . .wait — there's only so much room in any one fantasy, and this James Bond scenario has just about played itself out.

You can now get at least some kind of gambling action without ever walking out your front door: casino games, poker, horse racing. If you can think of a way of betting your money, you can also bet that someone has a thought of a way to get it inside a computer. Unfortunately, when you start considering the quality of the programs, buying them can be a gamble in itself.

On the surface, it makes sense. After all, gambling pretty much breaks down into games of skill and games of chance. With the games of skill, computers are ideal tools for teaching and practice. For games of chance, computers are the perfect mathematicians, always ready to figure to the three-thousandth decimal place the odds for or against doing just about anything.

Unfortunately, like just about everything else concerned with the world of gambling, what seems to make sense on the surface is often just a lurking invitation for some of your money to go from your wallet into someone else's. In this micro-age, we seem to have wandered from the touts who filled Damon Runyon stories (and even the Marx Brothers movies) to software publishers who are

Crap Out?

ready to help you win your wagers, if only you'll part with a little of your cash ahead of time.

Happily, not every program out there is a ripoff. Some of the blackjack programs now on the market can actually help you win more money at what is becoming the most popular game in America's casinos. For several years now, there has been one standard against which all others must be tested: *Ken Uston's Professional Blackjack* (Screenplay, $69.95).

It's difficult to classify Uston's *Blackjack*. It can be played strictly as a game, and on that basis it's a very good simulation. But buying it just for play would be like buying an anatomy textbook just to look at the nude pictures: You might enjoy it, but you'd be missing the whole point of the thing. *Professional Blackjack* is just that — a program that prepares you for real gaming tables.

The graphics for the Uston program are adequate, but not spectacular. You begin by moving through several menus that let you choose which of the numerous casinos you are going to play in, what house rules you are going to play under, and what type of players you want to sit around the table with you. The actual gameplay, however, shows that much more attention went into the strategy and rules than into the graphics. Cards are represented in rudimentary fashion as they are "dealt," and when a player "splits" a pair, the result can be visually confusing because the screen starts to crowd up. However, it seems unfair to criticize the program for its graphics when its sound and intelligent presentation of the principles of blackjack make it so worthwhile.

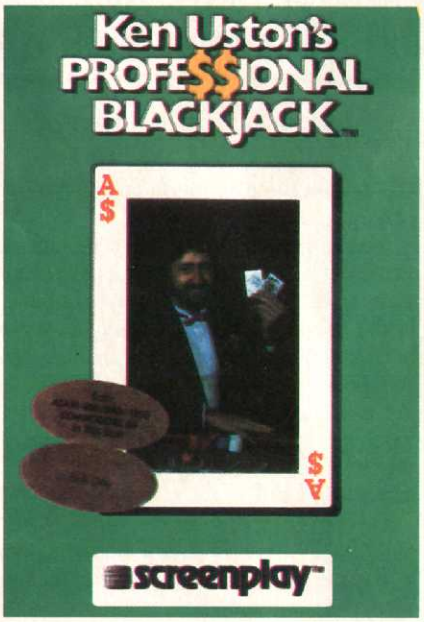
Uston's program is first and foremost a teaching tool — educational software designed to teach its users how to effectively play the game of blackjack. Several systems are taught in the program, ways of keeping track of cards and determining wagers and strategy for deciding when to stand and when to take another card.

Now, before your eyes glaze over at the thought of sitting at your home computer and spending hour after hour learning how to play one of the simplest card games ever created, be aware that Ken Uston is generally acknowledged as the foremost blackjack player in the country. He wears as a badge of honor the fact that he has been banned from the blackjack tables of most American casinos. The man obviously knows his business.

Learning blackjack techniques and systems actually makes sense, since it is one of the few games where the odds change with each deal. Uston's program teaches you to use the changing odds to your best advantage. A book, which includes useful, though a bit complex, charts comes with the software; and both disk and book cover several versions of Uston's system — in case you don't feel up to memorizing every card played.

Blackjack may not put you on a lifetime winning streak, no matter how assiduously you work with it. After all, Uston admits that even he has some hellacious losing days when the cards insist on acting as if they've never heard of probabilities. However, if you're going to wander into a casino anyway, there's no question that *Ken Uston's Professional Blackjack* can help you keep a little more of your money, if not actually add some of the casino's to your bankroll.

Now, from the same folks who bring you Ken Uston's program, there comes one that allows you to simulate playing conditions at three different sites. It's called *Caesar's Guide to Gaming — Blackjack* ($69.95), and if you can't guess what casino *this* game is based on, you'd better never get close to Wayne Newton's Palace in the American Desert.



Caesar's Guide has very interesting graphics, plays at a reasonable speed, and, like most blackjack programs, it lets you play with a full deck. *Caesar's Blackjack* has more stunning graphics than any program I've seen so far. Before you even get to the table, there's a rather impressive rendering of the real Caesar's (at least on the IBM system with color monitor I used). During play, there are some elegant-looking players at the table with you, and the cards are easy to read. These nice touches show some concern with presenting a gambling game with a difference.

Unfortunately, Caesar's version of computer blackjack also comes with a tutorial that is designed to teach you how to play better blackjack. Caesar's says it just wants its gamblers to be better informed. I say it teaches you nothing compared to what you need to know to come out ahead. Caesar's wants you to come to their various palaces and bring your money. They even include with the software a coupon worth up to $125 for a free night's lodging at either their Atlantic City, Las Vegas or Lake Tahoe casino-hotel.

Caesar's, by the way, is only beginning a series of gaming software with its blackjack component. Screenplay promises the imminent release of "Caesar's Guides" to Craps, Baccarat, Roulette and Slots.

Think about that. Computer software simulating slot machines. Now, slot machines may be fun to play. They whir and clang and buzz and spit up quarters every once in a while. But who in the world would want to buy a computer program simulating a slot machine? I mean, unless they've got it fixed so coins come out through the disk drive, there is no more point to it than buying a computer program to flip a coin for you while you play "heads-or-tails."

And this, regrettably, is pretty typical of most computer versions of casino games. The very nature of the games is such that they must be played fast, and must be pretty simple to learn so as not to confuse players of varying degrees of

skill or knowledge. They also must give the casino the edge so that over the long run, people leave more money than they take away.

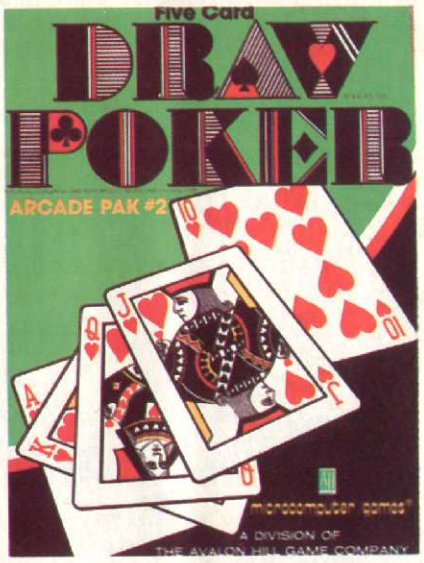
There will be some, of course, who enjoy the simplicity of these games of chance. More than a few homes have working replicas of slot machines, and more than a few of us bought hand-held versions of electronic draw poker when they first came out several years ago. The big question, it seems, is whether there is any staying power to these games. While they may be entertaining and fun the first few times they're played, you'd have to be a video junkie with no other choices to stay with them for long.

Slots, roulette, craps, and baccarat all require skills roughly equal to picking the right number on a wheel of fortune, which is, incidentally, also a staple at many American casinos. Based strictly on blind luck, your chances of winning at these games are not going to be one whit better if you practice them at home until your video monitor burns a hole in your retina.

Strategic Gambling Simulations is software from Casino Software, Inc. which offers you the chance to play baccarat or wheel of fortune, in addition to roulette. It also offers you the chance to realize that these games aren't much fun when you aren't really gambling with honest-to-goodness money. Not much fun? Heck, they're dumb. Only the romance surrounding the degenerate kings of 17th century France and James Bond have kept these games from acquiring the same reputation as the "pea-under-the-shell game." Playing them at home does nothing to help you win money at the computer, and, since the games quickly grow tiresome when played with imaginary computer funds, it seems a waste of real-life money to buy either the current crop of available casino software or to save your pennies to buy the *Caesar's* packages.

There is one other type of gambling that takes place on the floor of most Nevada casinos, as well as in licensed clubs throughout California. That's poker, and, of course, we all know that the game is privately played, regularly, just about everywhere.

Poker may be the gambling game that requires the highest degree of skill, and generally, it permits a skillful player to



overcome even hours of bad luck with cards. Some of the best software programs simulating poker really make the computerized game as challenging and as potentially rewarding as sitting around with the cigar-smoking boys on a Friday night. And the nice thing is that you can bet with $100 minimums on the computer, and never once flinch if somebody insists on staying in when you're bluffing.

Silicon Slim's Low Ball Draw Poker, from Snake River Software ($34.95), is truly one of the most oddly named pieces of software ever developed. It is also a remarkably good way to learn to play — what else? — low ball draw poker. A few hours with the program may not necessarily prepare you to walk into a poker parlor and scout out the toughest table, but it will give you the chance to grasp the soundest principles about playing a game that rewards players who best understand its concepts.

> Slot machine programs would be a good idea if you could get coins to fall out of the disk drive.

Like too many of the poker programs out there, the graphics aren't all that good, although they're not terrible, either. Of course, if you're not among the cast of dozens who choose to play low ball draw poker, you might want a more ordinary poker game, such as draw or stud.

Although it's not listed in their 1985 catalogue, Avalon Hill's *Draw Poker* ($21.00) is probably the best to have become available in recent years, and it can still be obtained in many stores. It is a very accurate simulation of a real poker game, with even the lengthy pauses between action built in. Now, that might seem like a flaw in a computer program, especially one you're playing alone, but after all there often are lapses between bets and raises in real games. Those lapses are frequently telling when trying to determine whether a player is bluffing.

Enough of cards, you may be saying. You're probably muttering that your gambling is done outdoors, where the Good Lord surely intended it. Horses, the noblest animals on the face of the earth are your favorite way to punch a few dollars now and then.

Relax. There's software for you. In fact, there has been software for handicapping horse races since some man in Silicon Valley first figured disks would work if they just put a hole in the middle. Again, it's a tantalizing proposition, this predicting which horse will win. Somehow, it seems as if it would be one heck of a lot easier if a computer could just take the information available, digest it and burp back a winner.

The Software Exchange is selling a program called *Racing Analysis Package* ($29.95). It is, to be kind, a waste of money and an even bigger waste of time. The program purports to handicap both thoroughbred and harness horse races. It claims to do this by asking three basic questions about each horse in a race.

This system's success might seem believable to the type of people who never caught on that Mr. Ed wasn't really talking. Otherwise, there isn't much merit to the program, and it's unlikely anyone will fall for its rather lazy approach to horse race handicapping. There are dozens of factors that go into predicting the eventual winner of a race, and this program considers but three of them. It ignores

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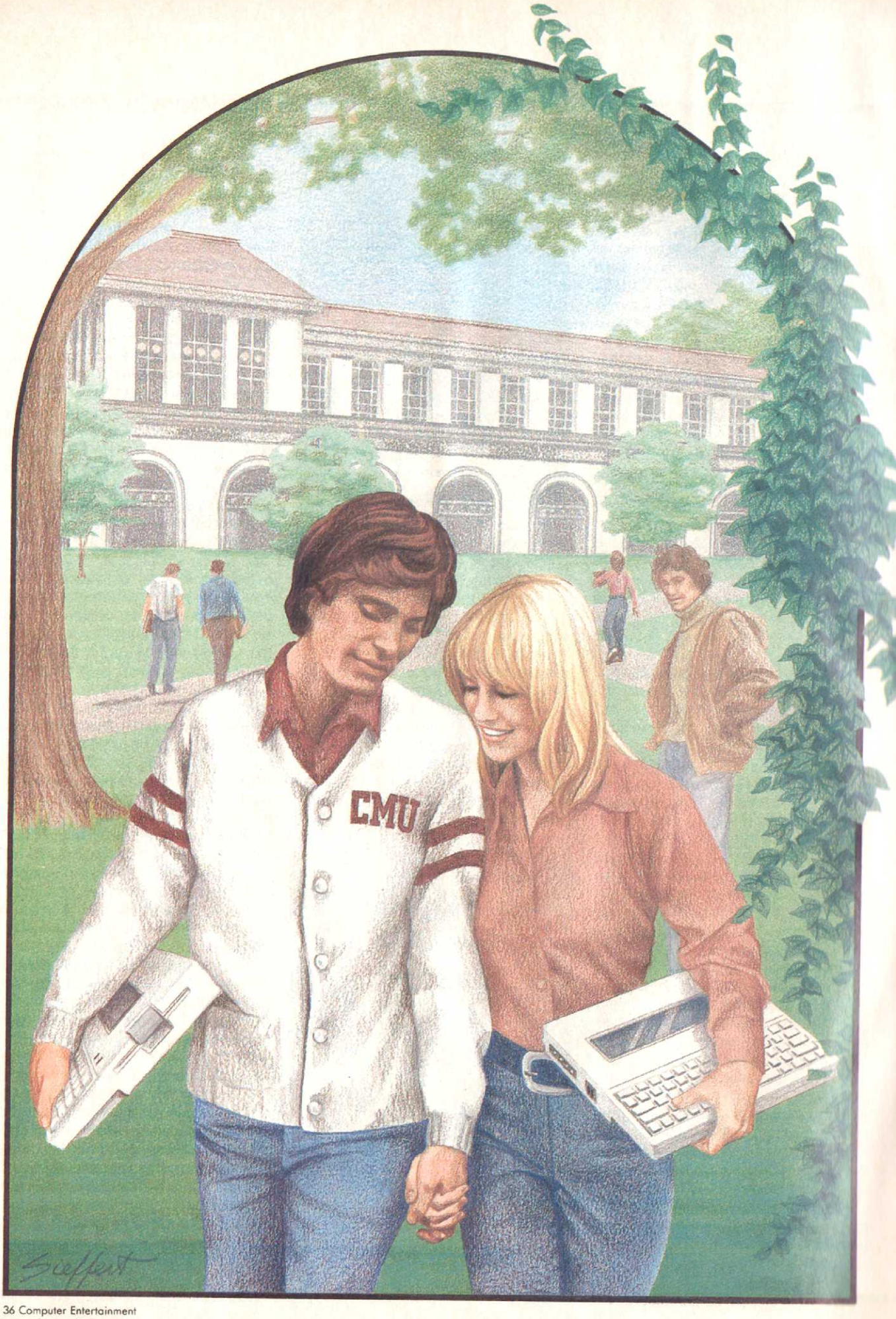

CMU
Seffert

Be A ROGUE SCHOLAR... Or Just A Varsity Hacker

By NOE GOLDWASSER

Students may be making more time with computers than with each other at Carnegie Mellon. You don't have to be a hacker to go there, but it couldn't hurt.

The Graffiti Monster was flaming on the bulletin boards again. Just mouthing off creatively, knocking around comments and opinions like so many fly balls at batting practice. Also on that night were the Amoeba, BK, Deej, Ward Cleaver, and a couple dozen other Carnegie-Mellon students who happened to be checking through the E-Mail for messages, chatter, or new recipes.

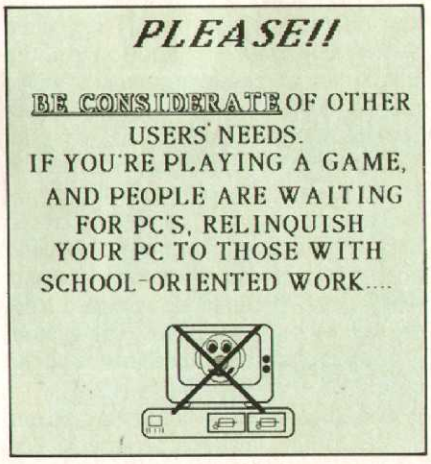
You've seen the banter before, in descriptions of that new American mode of communication — electronic bulletin board (or bboard) chatter. What's interesting about this little electronic rap session is that it chronicles student life at Pittsburgh's Carnegie-Mellon University, known in some circles as Computer U. CMU was one of the earliest pioneers in campus computing, and in 1982 was the first to announce a campus-wide computer network. This sharply distinguishes it from the growing number of schools that are simply requiring their students to have a personal computer. Computer ownership is not even a technical requirement here; it just seems as if everyone has one. "There's a big difference," says Don Hale, a campus spokesman, "between having kids pick up an Apple and giving them plenty to do with it afterwards." Even Carnegie-Mellon's prestigious drama department has found something for computers to do — stage lighting. In fact, computers are so much a part of campus life that it almost seems as if there's not much else to do.

There's no student union to speak of, or even a handy off-campus beer hall, unless you go a mile down the road to the more jock-oriented University of Pittsburgh. Students don't come to CMU to hang out. They come here to learn. And because there is an abundance of computers.

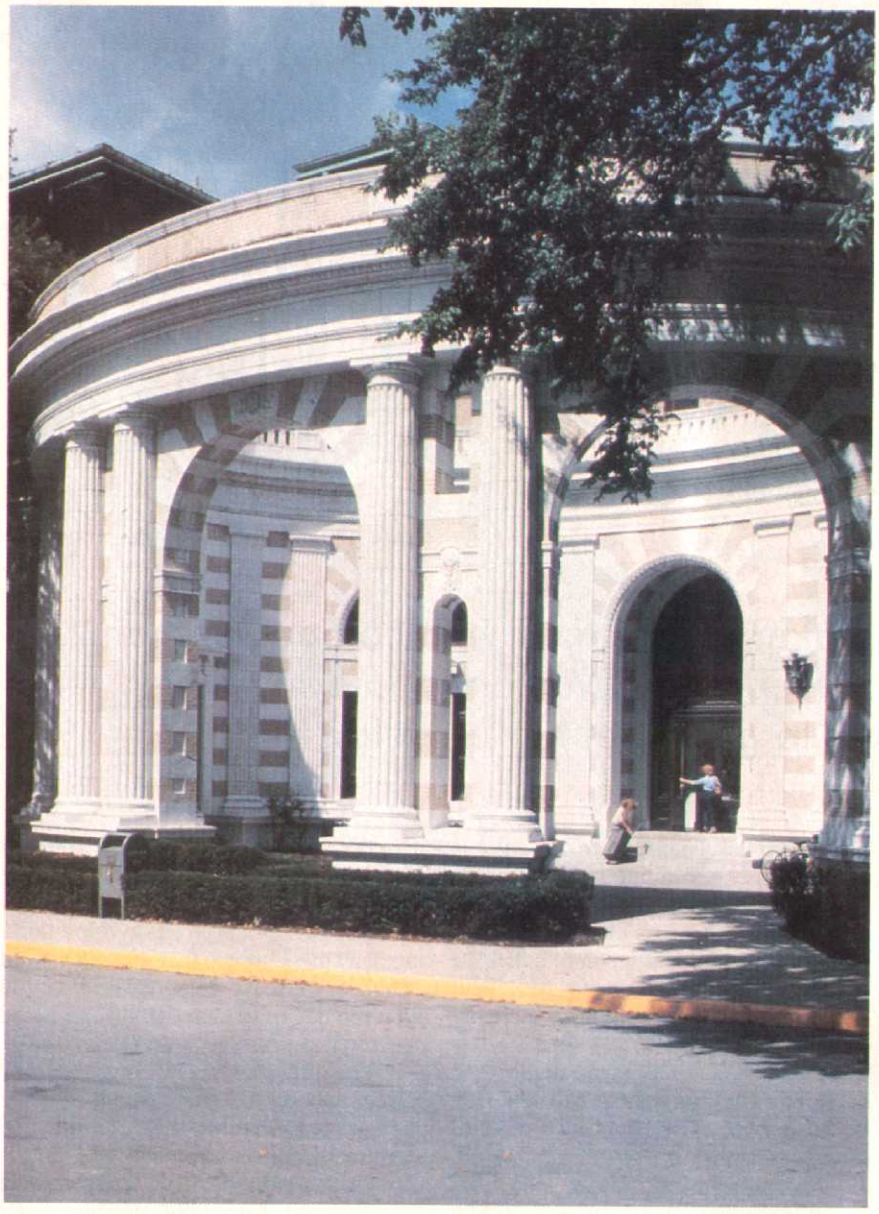
"This is not a fun school," says Bill Foster, a senior engineering major who is showing me around the Computation Center, where he has a paying job servicing mainframes and distributing printouts. "The best way to communicate is to send mail, but you don't actually meet people that way. Often you won't speak to a person who's razzed you the day before on the bulletin board — you'll get him back on the system.

"The terminal rooms are the only places where you meet people. People sit next to each other there, working on terminals or PC's. You ask your neighbor for help with the hardware, and you'll usually get it. That's how people meet." Even liberal arts majors use computers to work on their term papers here, and many art, English, and history instructors are beginning to work special computer programs into their curricula.

The distribution of seven "terminal clusters" around the campus is a transitional phase in a program whose ultimate goal is to hook every student, via computer, directly into the University's vast information infrastructure. Each of these clusters has 20-40 CRT terminals or PCs with terminal-emulation programs that allow them to be connected directly to the University's more than 50 mainframes. Most of these machines are IBMs, Hewlett-Packards, and Suns, and there is a cluster in the basement of the school's library devoted exclusively to Apple Macintoshes. There is public



ROGUE SCHOLAR



access by students to a total of 134 Micom-linked IBM PCs with 256K memory and 45 128K Macs, in addition to various work stations that play with data from the mainframes. All dorm rooms and outlying buildings are connected by fiber-optic cables, which will ultimately (by 1986) serve the master plan of transition from the current environment of simple terminals connected to a central mainframe core to one of powerful workstations connected to each other and to file servers by a campus-wide network. Software to implement this is being worked out largely by hackers recruited for pay from the student body.

CMU students often have IBM or Macintosh personal computers and modems or terminals in their dorm rooms and off-campus housing. (They get a substantial price reduction on the machines at the campus computer store.) From these or from any of the terminals in the clusters, they have instant access to other students, the library, their professors, and a lot of specialized course work, as well as stored data of their own, hundreds of bulletin boards both on and off campus, and help messages that can be downloaded from the central memory banks. The system is becoming more comprehensive all the time.

The abundance of computing power on the campus makes Carnegie-Mellon students micro-savvy. They work on and edit their term reports on the machines and get super-quality printouts by punching a few keys that send Print messages to the Comp Center. They also use these advanced printing facilities to type up fancy resumes and send form letters to prospective employers. They do intricate vector analyses and probability tables on them, and use the computers to work out logarithmic problems. They write love letters and poetry on them — and they play games.

The university does not frown on game-playing with the computers, as long as other students are not kept from the machines because of it. This rarely happens, since there are plenty of computers to go around, and the students are self-motivated enough to keep from frittering their time away on games. (An informal spot-check at the Comp Center PC cluster showed fewer than 5% of students playing games.) Copies of *Dungeons and Dragons* type games like *Rogue*, *Hack* and *Aargh* can be called up on the central system, and some students carry disks of games such as *Witness*, *Choplifter*, *Zork*, and *Flight Simulator* with them to be slipped into the PC disk drives as tension-relievers during long spells of programming. For the advanced hacker, there is *Core Wars*, wherein, according to one enthusiast, "the object is to take over the computer memory. You write your own assembly code and you try to kill off everybody else's code. It's a really intelligent game. If you're a real greasy hacker, it's great. It brings out the real disgusting hacker things — pre-fetches, self-modifying code, things like that — that they don't tell you about unless you read the manuals."

On the surface, Carnegie-Mellon fits the stereotype of a peaceful, sprawling, green-lawned oasis of learning in a big city. It is built on a sizable piece of land laid out by founder Andrew Carnegie in the heyday of his steel-wielding industrial-revolutionary largess. And like many things in Pittsburgh, the original edifice was built as a monument to his memory. The main quadrangle is shaped like a boat, with the long and cavernous Baker Hall forming the larboard, and equally-long Wean Hall the starboard side. The "bow" faces toward Pittsburgh, which you can see in the distance, and there is a non-functional concrete "prow" at one end of the campus, the presence of which baffles those who don't know about the ship metaphor.

Baker Hall is built into a hill so that from the inside, with its endless hallways sloping downward and lined every 20

Copies of D-and-D type games like *Rogue, Hack* and *Aargh* can be called up on the central system.

feet with candelabras, it resembles a dungeon that would make an excellent skateboarding track. This, too, had its practical side when Carnegie first designed the place. If the university hadn't worked out, he planned to use the downward-sloping building as a gravity-based factory.

Fortunately, the university did work out. But some of Carnegie's original pragmatism has survived in the computer-intensive philosophy of current president Richard Cyert. Cyert's dream, he told me, is to "make a revolution in higher education. The computer is the greatest addition of capital to the student as a learning machine that we have had since the printing press. With the computer and with good software — which I am counting on students to help us develop — we can have the greatest educational structure the world has ever known."

The intensification of computing at the undergraduate level is the final touch to a program that, over the past few years, has made CMU a major silicon think tank, right beside Stanford and MIT. Its graduate Artificial Intelligence department is filled with researchers who are finding ways to make computers smarter and are coming up with new speech synthesis, motor control, and system-programming phenomena which attract heavy grant action from the government and major corporations like Westinghouse. The university is being looked at by steel-moribund Pittsburgh as no less than a savior, a progenitor of a new silicon economy that might take the ailing Iron City dinosaur into a new high-tech future.

In the bowels of Wean Hall, the AI center of the campus, you'll find the Wizards — intently programming and playing with abstract concepts that could lead in some way to expanding the limits of machine "intelligence." The Wean Hall Coke machine's ready-lights are wired so that research fellows can tell if there's a cold Coke without leaving their offices. "I can type 'Coke' on my terminal," says Mike Mauldin, "and it'll tell me which chambers aren't full and how long the cans have been in the machine."

To Mauldin, research is the ultimate computer game. For the past four years, much of his time has been spent playing *Rogue* in the interest of science. With fellow researchers Guy Jacobson, Andrew Appel, and Leonard Hamey, he created a program called *Rog-O-Matic*, a computer program that plays *Rogue* and consistently scores against the toughest hacker-champs.

Somewhere in the literature of the school's computer science department you can find a research paper funded by the Defense Advanced Research Projects Agency (Department of Defense), titled "Rog-O-Matic: A Belligerent Expert System." The paper's abstract describes *Rog-O-Matic* as "an unusual combination of algorithmic and product-systems programming techniques which cooperate to explore a hostile environment. This environment is the computer game *Rogue*, which offers several advantages for studying exploration tasks. This paper presents major features of the *Rog-O-Matic* system, the types of knowledge sources and rules used to control the exploration, and compares the performance of the system with human *Rogue* players."

For the uninitiated, *Rogue* is a real hacker's game. It originated in Berkeley and was written by Michael C. Toy and Kenneth Arnold on a Unix system there. It has since traveled to other time-sharing machines like VAX, and there is even a PC version marketed by A.I. Design (201 San Antonio Circle, Suite 115, Mountain View, California 94040).

The "board" is composed of typed

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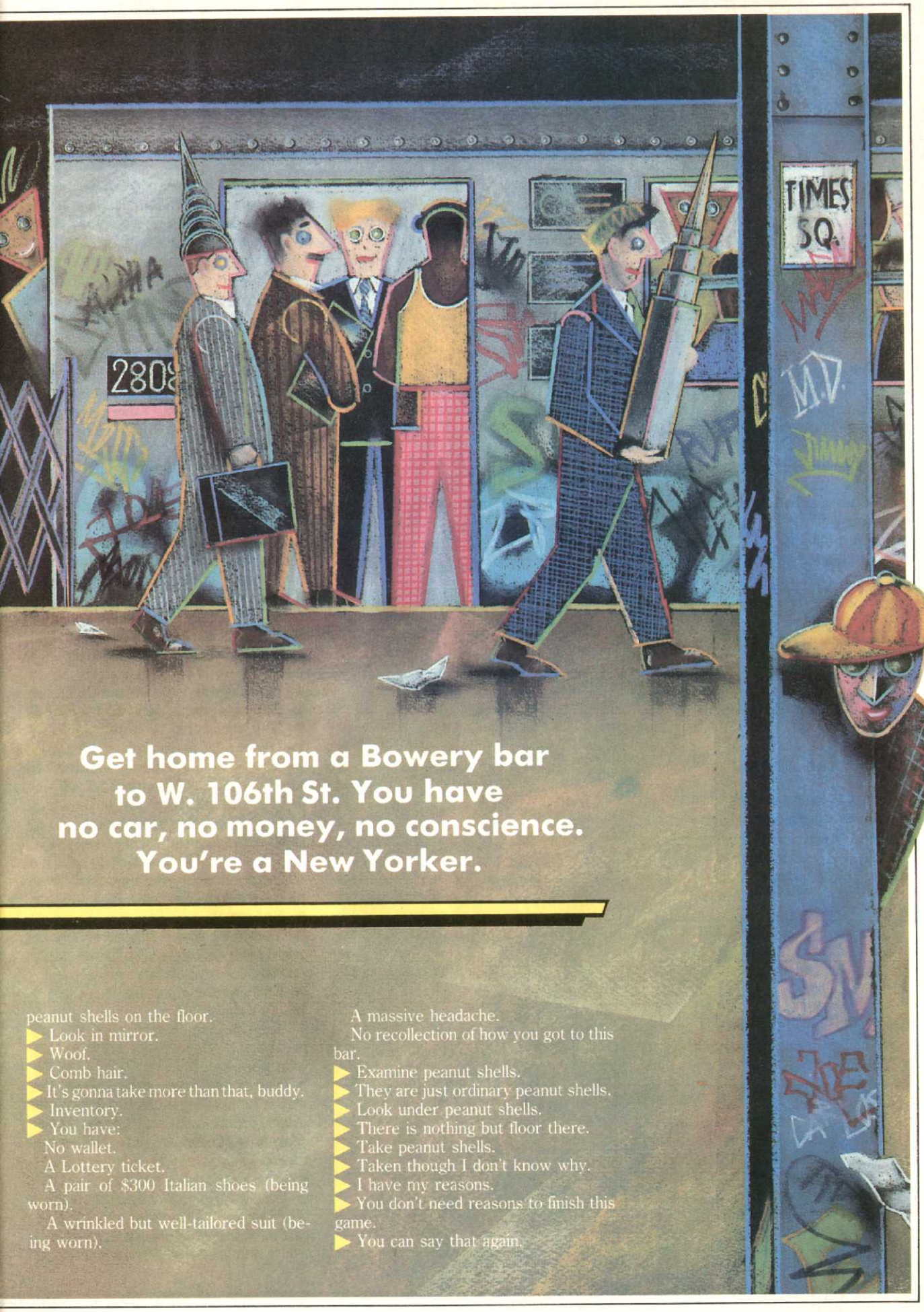
Fun City

By RANDI HACKER (& FRIENDS)

As a rule, text adventures take you through some rough and risky territory, filled with mutant life-forms, incurable diseases and sushi-bars on every corner. Usually, designers have to rack their brains to invent such a world — but they could just look at the IRT map. New York City even has an Underground Empire, or at least an underground... something. (Greater minds than ours have failed to adequately describe the subway.) What would an adventure about NYC be like, we wondered. Maybe it would be like this:

▶ It is June, 1985.

You wake up with your face in the pretzels. You don't like pretzels. You don't like your face but there's nothing you can do about that right now. You look around. There is a redheaded woman sleeping at a table. She is dressed in a way you would describe as "puh-leez." She is snoring. The bartender is wiping a glass. There is a mirror behind the bar. There is an exit to the south. There are



Get home from a Bowery bar to W. 106th St. You have no car, no money, no conscience. You're a New Yorker.

peanut shells on the floor.

▶ Look in mirror.

▶ Woof.

▶ Comb hair.

▶ It's gonna take more than that, buddy.

▶ Inventory.

▶ You have:

No wallet.

A Lottery ticket.

A pair of $300 Italian shoes (being worn).

A wrinkled but well-tailored suit (being worn).

A massive headache.

No recollection of how you got to this bar.

▶ Examine peanut shells.

▶ They are just ordinary peanut shells.

▶ Look under peanut shells.

▶ There is nothing but floor there.

▶ Take peanut shells.

▶ Taken though I don't know why.

▶ I have my reasons.

▶ You don't need reasons to finish this game.

▶ You can say that again.

Fun City

▶ You don't need reasons to finish this game.
▶ Examine woman.
▶ I'm afraid you'll have to have a nurse present if you're going to do that.
▶ Wake woman.
▶ How should I do that?
▶ Shake woman.
▶ Shaking the woman has no effect. She is currently around 15 sheets to the wind.
▶ Shout at woman.
▶ You only make yourself hoarse.
▶ Kiss woman.
▶ Believe me, you don't want to do that. Lips that have been where her lips have been, should not even be on a face.
▶ Slap woman.
▶ The woman wakes up cursing.
▶ Woman, tell me about my wallet.
▶ I'm not talking.
▶ Give the woman the peanut shells.
▶ The woman is not interested in peanut shells.
▶ Buy the woman a drink.
▶ Now you're cooking! The woman gulps down the double Scotch.
▶ Woman, tell me about my wallet.
▶ Was it leather?
▶ Yes.
▶ It was leather.
▶ Thank you, sister.
▶ "I'm not your sister." She gives you a book.
▶ Examine book.
▶ It is a Spanish phrasebook.
▶ Open book.
▶ Opened.
▶ Read book.
▶ It says, "Buenos dias, senor. Usted tiene pestanas bonitas." (Hello, sir. You have mighty pretty eyelashes.)
▶ Turn page.
▶ Turned.
▶ Read page.
▶ It says, "Lo siento que llegare tan tarde para accompanarle en la harpa."(I'm afraid I will arrive too late to accompany you on the harp.)
▶ Memorize phrases.
▶ Calling upon powers you didn't know you had in your condition, you memorize the phrases.
▶ s
▶ As you are about to leave, the bartender grabs you and asks you how you intend to pay for the drinks you ordered.
▶ Give the bartender the Lottery ticket.
▶ The bartender takes it and lets you go.
▶ s
▶ You leave the bar. (Just as a point of interest, you might like to know that that ticket you so casually handed to the bartender for a bar bill of about $50, was the *only* winner in the next week's $15 million drawing. The bartender closed the place and bought Wyoming.)
▶ You step outside. It's cold. It's dark. Your car, which was parked outside, is gone. There is a street sign.
▶ Read sign.
▶ The sign says, "Tow Away Zone."
▶ Slap yourself in the forehead.
▶ Done.
▶ The street goes east. A drunk is asleep in the doorway next to you.
▶ Wake drunk.
▶ You can't wake the drunk.
▶ Look under drunk.
▶ There is nothing but dust there. Dust and something you don't especially want to know about.
▶ Roll drunk.
▶ These are desperate times. You roll the drunk. Something falls out of his pocket.
▶ Examine thing.
▶ It's a dollar bill.
▶ Take dollar.
▶ Taken.
▶ n
▶ You try to proceed north but your way is blocked by a crowd of creatures only reminiscent of life on earth. They are all milling around outside movie theatre.
▶ n
▶ Your way is blocked by a tall man with blue hair and a tattoo depicting the Rape of the Sabine Women. His girlfriend's hair is orange and raspberry colored and

shaved so that if you were to look down on her head from a low-flying plane it would appear to say "Yo mama!" Both are wearing leather jackets and have had chains surgically implanted into their waists. "Where do you think you're going?" they say.

▶ n

▶ They won't let you pass. "You don't belong in this neighborhood," they say, and then laugh at your clothes.

▶ Mess hair.

▶ You mess your hair.

▶ n

▶ No dice. That won't do it.

▶ Rip shirt.

▶ You rip your shirt.

▶ n

▶ Bingo. As you move quickly up the avenue, you see someone who looks like your doorman, Manuel, with someone who *doesn't* look like his wife going into a notorious leather bar.

▶ n

▶ You come to a subway station. There are two globes above the stairs.

The stairs lead down.

▶ d

▶ The entrance to the platform is blocked by an iron gate.

▶ u

▶ You're on the street.

▶ Examine globes.

▶ The globes are red.

▶ Cross street.

▶ You are in front of a subway station. There are two globes above the stairs.

The stairs lead down.

▶ Examine globes.

▶ The globes are green.

▶ d

▶ You are in a subway station. The whole place is pretty seedy looking. There is a token booth to the east and turnstiles to the west.

▶ e

▶ You are at the token booth.

▶ Put dollar under window.

▶ Done. The clerk asks you how many tokens you want.

▶ Clerk, I want one token.

▶ The clerk takes the dollar and counts out one token. Then he counts out your change. He wants to use his calculator. His calculator is solar-powered. Four trains go by.

▶ Examine map.

▶ The map is covered with graffitti that says, "Toyo is King."

▶ Look under graffitti.

▶ There is nothing but dust there.

▶ Put token in turnstile.

▶ Done.

▶ w

▶ On the platform. Two trains pull in. The doors open.

▶ Enter train.

▶ Which train do you want to enter — the uptown train or the downtown train?

▶ The uptown train.

▶ Too late. It just left.

> Your way is blocked by a man with blue hair. His girlfriend's hair is orange and raspberry.

▶ Wait for next train.

▶ Another train pulls in.

▶ Enter train.

▶ You enter the train and sit down next to a fat woman eating a spicy salami sandwich. The loudspeaker starts crackling.

▶ Listen to loudspeaker.

▶ (the loudspeaker) Garble, garble, garble, out of service, garble, garble garble, have a nice day.

▶ Exit train.

▶ You exit the train and stand on the platform. The crippled train pulls slowly out of the station.

▶ Wait for next uptown train.

▶ Another uptown train comes.

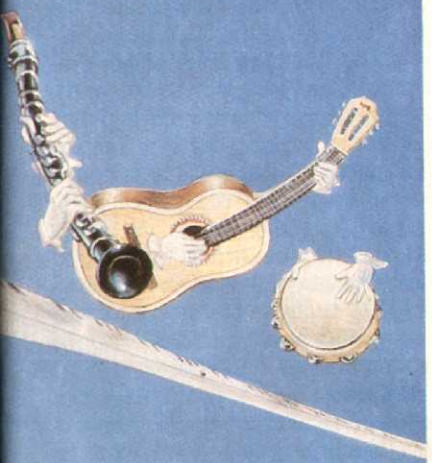
▶ Enter train.

▶ You enter the train and sit next to a skinny, balding guy with glasses. He looks like a nice man. The man looks you up and down and then asks you how come you're such a mess.

▶ The last thing I remember is having a couple of screwdrivers. . .

▶ At the word "screwdriver," the skinny guy goes berserk. He pulls out an unregistered gun and starts shooting

Continued on page 76



TAKING MIDI TO THE MAX

Keyboard synthesizers can turn your micro into anything from a full orchestra to a rock band.

By JOHN AMARAL

A walk through a music store nowadays is nothing like it used to be. Instead of wall-to-wall pianos and band instruments, it's guitars, keyboards, and . . . computers. Computers from Commodore, Apple, Atari, and IBM are finding a place alongside music synthesizers from Roland, Casio and Yamaha. And musical instrument companies like Yamaha are now adding computers to their product lines.

The phenomenon that is making this musical magic possible is "MIDI," an interfacing protocol that has lately been responsible for getting music synthesizer manufacturers to cooperate. Now their synthesizers talk to each other, and with computers, without getting hopelessly confused. This is where we come in. If you're like me, and have been interested in music and computers for a while, you've been waiting impatiently for the promises of the binary prophets to filter into the musical arts. MIDI is the realization of those promises.

All you really have to know about MIDI is that it uses special cables with 5-pin connectors which go between a music synthesizer and your MIDI-equipped computer. You usually need an interface box or card, too. Then, you're set. (See sidebar for a more detailed definition of MIDI.)

Tell a salesman at a typical music store selling high-tech gear that you're shopping for a music computer system, and he'll probably take you on a whirlwind demo tour that would go something like this:

He types a few commands on the Macintosh, and instantly the room fills with the sounds of a four-piece band. You pick out drums, bass, guitars, piano. As the music continues, he plays a burning solo on a large black keyboard that sounds more like a trumpet than anything else.

"That's an idea of what the Kurzweil can do," the salesman says, smiling. "It's a sampling synthesizer with a Macintosh connection that lets you record the sounds of live instruments and play them

TAKING MIDI TO THE MAX

Plugged into the Commodore 64, Sequential's MAX can create six different sounds at once.

with the built-in keyboard. It's really awesome. Listen to this."

He begins to play again. You identify string sections, vocal choirs and even an acoustic bass and piano combo. The piano sounds incredibly realistic.

"That's great," you say, "but it looks pretty expensive."

"Yeah, it's $11,000, plus the Mac. I wanted you to hear what it's possible to do if money is not an object. There are plenty of great-sounding synthesizers that hook up to computer systems, from about $400 on up. For example, this is the Casio CZ101. With it and an Apple or Commodore, you can record and play up to four distinct instrumental voices, and even print out music with reasonable quality."

"What's reasonable'?"

"Well, it's readable, but not publishable. Better quality printing is available for the Macintosh, for example, but it'll cost you more money."

"Synthesizers come in all price ranges, but if you want MIDI, you have to pay around $500. For example, the MAX from Sequential offers two more available MIDI voices than the CZ101, for a total of six, and if you pay another $100, you can get Sequential's Six-Track, which is like a MAX except that it lets you program it from the synthesizer. The extra voices are nice, but if money is tight, I'd go with the CZ101, because a lot of software is being written for it."

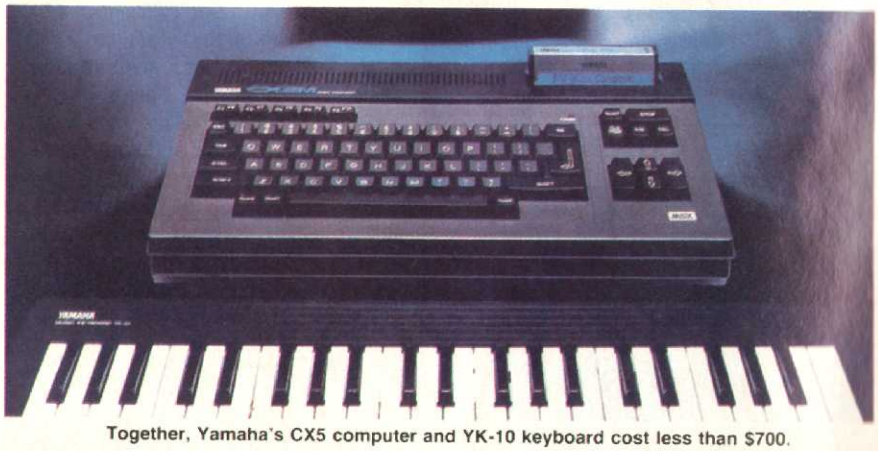
It shouldn't take long to realize that choosing a MIDI-equipped synthesizer — like buying a computer — is no simple task. For example, you learn that a MIDI synth may be purchased with or without an integral controller, and that the only available musical instrument controllers are keyboard or guitar, and that the only guitar controller they have is a rather expensive one from Roland. These are some of the approximate street prices you'll be quoted during your first visit:

- A MIDI synthesizer without controller, the Korg EX800 — $400.
- An inexpensive keyboard/synthesizer, the Casio CZ101 — $450.
- A six-sound-at-a-time keyboard/synth, Sequential's MAX — about $550.
- Music keyboard controllers from Korg and Yamaha — $500 each.
- The Roland guitar synthesizer/controller — $2400.
- Cherry Lane's human-voice controller, which outputs MIDI data — $300.
- Yamaha's DX9 and DX7 — $1200 and $1700, respectively.

"I've heard about this Yamaha musician's computer," you tell the salesman. "What can you really do with it?"

"The Yamaha CX5 is a very interesting machine," he says. "It's a $450 computer dedicated to making music, with eight built-in voices. It has the same sound chips as the Yamaha DX7 synthesizer which uses a frequency modulation method of sound production that was developed at Stanford University. The DX7 is the most popular synthesizer; about 100,000 have been sold world-wide. The CX5 incorporates the same technology as the DX7; the difference is you can have a lot of fun programming and playing with sounds without having to pay an arm and a leg. The first software available for it is limited, but I expect that there will be a better selection soon. One really nice thing about the CX5 is that you can get a keyboard and turn it into a full-fledged musical instrument, and even hook it up to a MIDI system. It's a sequencer, music-writing tool, and a DX7 programming utility.

" 'Programming,' a synthesizer can mean several different things," he explains. "Some people use the word to



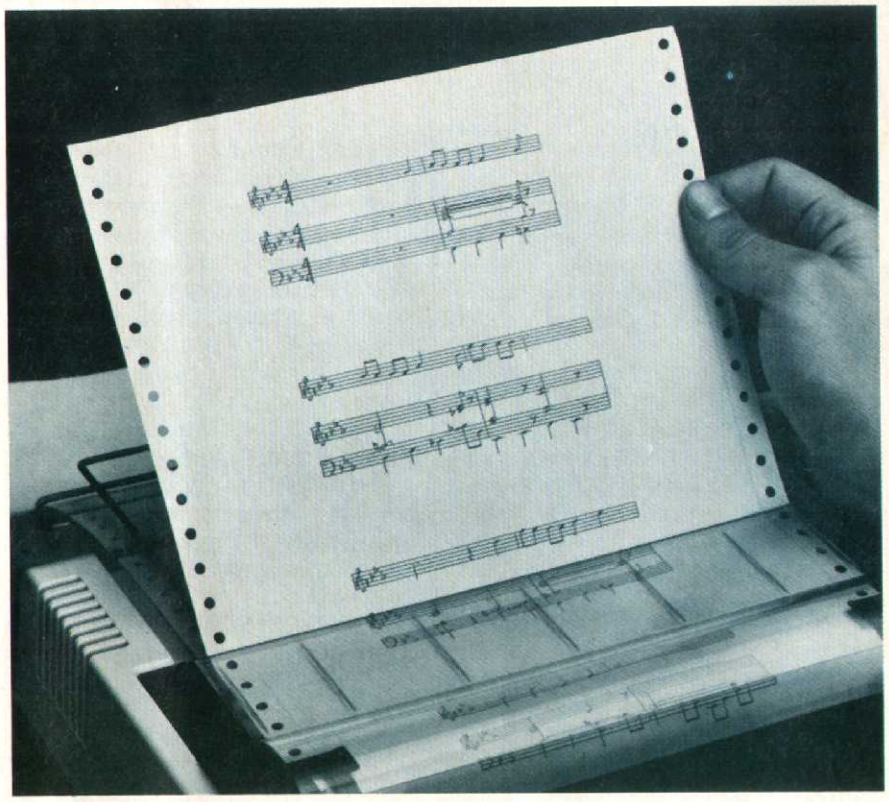
Together, Yamaha's CX5 computer and YK-10 keyboard cost less than $700.

describe simply making voice changes while you're playing. If you're recording with a MIDI system, the voice-changes get recorded while you play. What most people mean, though, is to change the parameters of individual voices to make interesting sounds on your own. Synthesizers used to be mostly analog; many of them were reconfigurable with patch cords, which is where we got the term "patches." Nowadays, most all the synthesizers made are digitally programmable. MIDI technology lets you change and store the patch information in much more efficient ways, by having your computer handle the hard work.

"MIDI information is digital numbers that are generated by the key depressions on the music keyboard —

All you need to know about MIDI is it lets computers and synthesizers talk to each other without getting hopelessly confused.

something like storing the strings of text from a word processing program. To make things more confusing (but easier to use), most of the software packages for recording MIDI are set up to resemble the operation of an analog tape recorder. This is where the track concept comes in. It's easy to think of laying down track after track, and layering them as on a professional tape deck. MIDI sequencing, which is another name for recording, is a lot like having your own recording studio. When you play the data back, you play it into the synthesizers, and the output of the synthesizers goes to your sound system, creating the actual music. There are some useful stand-alone sequencers — from Roland, for example — that are actually relatively inexpensive, dedicated computers. Many musicians prefer to use them on stage, because there is virtually no setup time. The best one going is Yamaha's QX1, which stores 80,000 notes." *Continued on page 82*



Passport's *Polywriter* (top) and Roland's *Music Processing System* (bottom) let you print out your masterpieces. *MPS* author Kentyn Reynolds (sitting) wrote the software for the IBM PC and PCjr only. Roland's other software package, *MUSE*, runs on Apple II computers and the C-64. Yamaha's CX5 (center) incorporates the same technology as the DX7 synthesizer (not shown). It's MSX compatible and is cartridge-driven.

Load & Run

A Discriminating Look at New Software

FOUR-IN-ONE INFOCOM SAMPLER

Designed by Mark Blanc, Dave Lebling, Steve Meretzky, Stu Galley and Mike Berlyn
Infocom, 1984/Most systems/ Disk/$7.95

The Four-In-One Infocom Sampler is a brilliant idea. There are few who haven't heard of Infocom and its excellent text adventures, but many have never actually played one. Price plays a major role in this; Infocom adventures are unique, and a lot of people don't want to spend $40.00 on a piece of software that they may not like. Even if you're sure that you would enjoy an Infocom game, you may not be sure just which one to get. So some people have never bought an Infocom adventure for no reason other than that they wanted to prepare themselves for what they were getting into. The *Sampler* changes all that.

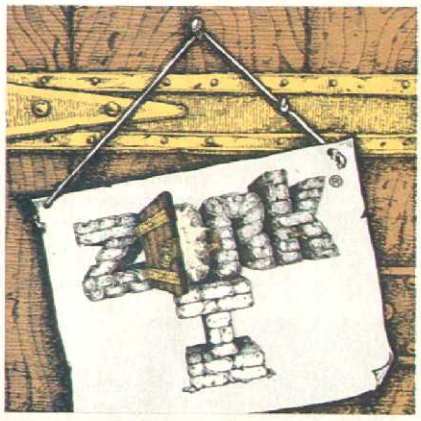
The Four-In-One Infocom Sampler, as its name suggests, contains samples from four popular Infocom games, each representing a different category of interactive fiction — *Zork I* for Fantasy, *Planetfall* for Science Fiction, *The Witness* for Mystery and *Infidel* for Tales of Adventure. In addition the *Sampler* contains a tutorial that is an excellent introduction to the world of adventure gaming, in which the computer leads the player, step by step, through a mini-game with the object of capturing a butterfly in a small, three-room world.

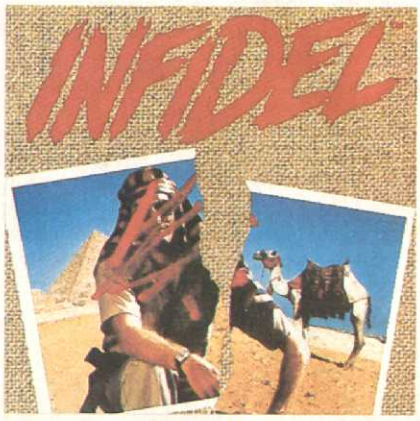
The tutorial is witty and enjoyable on its own — even with only three rooms and a handful of objects to work with, that Infocom humor shines through — but the real attraction of the package is its game samples. Each sample takes the player through the opening sequence of a game; for *Infidel* that means finding the lost pyramid, for *Planetfall* surviving the wreck of your spaceship and landing on the deserted planet, and in *Zork I* the player must find the first caverns of the Great Underground Empire. *The Witness*' sample is slightly different from the others because of the way that Infocom's interactive mysteries are designed; in that sample, the computer actually inputs predetermined commands on its own, to give the player (or rather, in this case, the viewer) a feeling for the general atmosphere of the game.

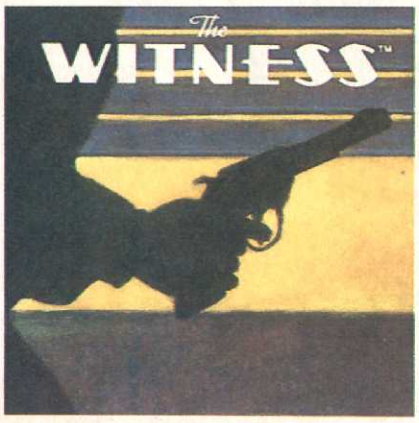
The segments are not long, but they manage to give the player an idea of what each game is like. They certainly fulfill their purpose, which is to make players want to finish the games, while also giving good examples of typical Infocom situations and puzzles.

The Four-In-One Infocom Sampler should put an end to some of the procrastinating that's been going on. Now all those people who have been putting off buying an Infocom adventure will no longer have an excuse. After all, four Infocom adventures on one disk? For only $7.95? It's almost too good to be true.

(Charles Ardai)







STEALTH

Designed by Tracy Lagrone and Richard E. Sansom
Broderbund/C-64/Disk/$39.95

As I darted across the planet's surface toward the ominous Dark Tower, I knew this would probably be my last mission. It was me against a war machine of thousands sent forth by the Council of Nine to eliminate the final threat to universal supremacy. From every direction fighter planes, scouts, and guided missiles attacked unrelentingly. Finally, the tower was within range but my energy was dangerously low. If I could just hold on. . .

Stealth is one of those good old-fashion shoot-'em-ups with a difference. The graphics are better than anything you've probably seen in quite some time. Landscapes shift realistically as you change your angle of approach. Enemy planes and missiles appear on the horizon as indiscernible dots and quickly evolve into detailed instruments of destruction before your eyes. As you pass over the terrain at incredible speeds, live volcanoes spring up out of the planet's surface spewing fiery lava of red, yellow, and orange. And when you've finally leveled the evil Dark Tower, the dust settles and your *Stealth* Starfighter warps out over

the horizon to meet the challenge of a new level.

The three-dimensional graphics are stunning while you're swerving to avoid a negative energy field, but there's not much time to enjoy the scenery when you're being blasted out of the cockpit by gunfire from enemy bunkers. For all of its visual brilliance, however, *Stealth* is really a pretty straightforward game.

You begin with a supply of 3000 energy units which is rapidly depleted as you head toward your goal. Enemy gunfire, negative energy fields, and the drain from your own anti-matter engines sap your ship's strength. Fortunately, you can boost your ship's power by flying through positive energy fields which are dispersed sparingly over the planet's surface.

As you race toward the tower, your instrument panel monitors your energy level, elapsed time, and remaining distance which must be traveled before you'll be within firing-range of the tower. Use the three ships you're allotted for each level wisely, and you'll reach the tower with energy to spare. Waste your power by firing at everything that moves and straying off-course to chase positive energy fields, and you'll find yourself disintegrating short of your goal.

The game has five levels in all, and most players will have no trouble making it past the first two. Beginning with level three, the enemy adds heat-seeking missiles to its arsenal. While, initially, these missiles seem impossible to avoid, experienced players will soon learn how to consistently dodge the oncoming missiles by using the game's sound effects as a warning system. From here it's just a matter of sharpening your energy conservation skills and learning to concentrate on the destruction of the Dark Tower when the enemy forces have pulled out all the stops.

Except for the graphics, *Stealth* is the same seek-and-destroy mission that most veteran gamers have flown hundreds of times. Even so, there is something hypnotic about the game that draws players back for just "one more try." Although experienced players should be able to complete all five levels by the second or third time they boot the disk, the game almost dares you to try to better your score. When you do, be sure to leave your initials on the high score screen as a reminder of your victory.

(Bob Guerra)

I KNOW IT'S HERE SOMEWHERE

Hayden Software/1985/ Macintosh/Disk/$59.95

Getting organized is a lot like going on a diet (except that even after you're completely organized you still wear the same size clothing). You're always looking for that miracle formula for fitting into that tiny little swimsuit by the time summer starts without having to deprive yourself of your favorite foods. This is known as grabbing at straws. Those who are chronically disorganized also grab at straws. Virtually any new gimmick marketed — from those intricate, cheerfully colored, plastic desktop pencil-holders to multi-colored tabs for file folders to simulated-wood file drawers — will be snatched up with a vengeance in the hopes that it will turn out to be the magical catalyst which will make you organized without making you do anything so distasteful as actually organizing. And when that one doesn't work, you can always look forward to the next. Here's the next: *I Know It's Here Somewhere*, a personal filing system.

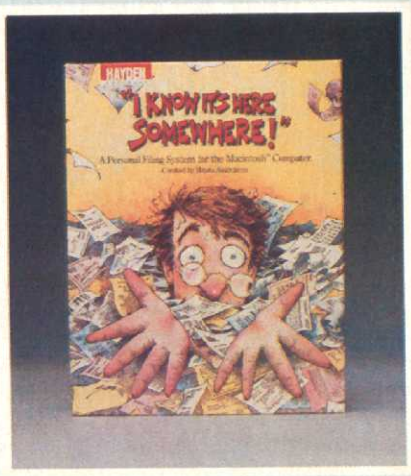
Inevitably, personal filing systems are about as exciting as mulch. First of all, they expect you to know what labels and fields are. A label is a category (such as telephone number) and a field is the information that goes into that category (such as the actual numbers). This, in itself, is simple. Dull, but simple nonetheless. Secondly, they expect you to be able to set up each label and field so that it has enough room for the information you're going to enter.

Let's take a telephone file for example. You might have three labels: Name, Address, Phone Number. This would require three fields. You've got to make sure these fields can accommodate all the information. So what you do, on a standard file program, is to enter the maximum number of characters you need. So if you have a friend named Wladziu Igorovich Tomczynski, you would tell the computer that the maximum number of characters you would need in that Name field is 28, including the spaces. That way, your friend Jon Doe would also fit easily into the field. The trouble with this method is that it presupposes a knowledge of what it is you want to file. If you knew this, you wouldn't need a file system in the first place, for Lord's sake.

I Know. . . has simplified this task enormously. Using the mouse, you simply format blank file cards by dragging label and field icons to the appropriate places and adjusting their length and width by stretching them. You don't have to deal with numbers at all, thank heavens.

You can set up birthday files with room for notes on what that person prefers not to receive. You can set up phone files, files for your video tapes, files of your records, and so forth. And you can organize them using any criterion: title, month, last name, number of toes, etc. All this is done using just the mouse.

You can either plunge right in and create your own cards or you can refer to the idea file which is included on the disk and gives you several examples of file-card setups. They vary, naturally, depending on what sort of file you're set-



ting up. An obituary file, for instance, would require vastly different data than, say, an address file. You would have no need for a zip code label. And if, after you've already set everything up and saved it, you find you've left something crucial off, say, the birthday file (e.g. the actual date of birth), you can go back and reformat at the click of a mouse.

(Randi Hacker)

MAXWELL MANOR

Designed by William H. Maxwell
Avalon Hill, 1985/C-64/Disk/$39.95

The only thing this game doesn't have is Vincent Price. It has everything else — an eerie haunted mansion: a bevy of creepy-crawlies (including a giant Vampire Spider); two rival scientists delving into the unknown; a mysterious gentleman named Maxwell who, legend has it, was found one day "minus his head"; guns, crosses, lanterns and, of course, plenty of poisonous blood stains. *Maxwell Manor* has a wonderfully gruesome plot involving a search for poor Mr. Maxwell's skull, an intriguing player character called Professor Arabesque, and the best package art since Infocom's *Planetfall*. But no Vincent Price. Oh, well; you can't have it all.

Maxwell Manor is by far the best horror-based computer game yet, even surpassing last year's excellent *The Castles of Doctor Creep*. A typically high quality game by Avalon Hill, *Maxwell Manor* is a fine blend of action and strategy; in fact, the game has the feel of an adventure game despite the fact that the play mechanic involves moving a character around a scrolling graphic screen with a joystick.

In the player's quest for the Skull of Doom, he must collect a variety of treasures while fending off attacks from all sorts of deadly creatures. To defend himself, Professor Arabesque has a gun and a sword; in cases when these are inadequate, he must use his wits to get out of sticky situations. The Vampire Spider, for instance, isn't harmed by ordinary weapons. The haunted cannon won't be stopped by a mere sword thrust. Surviving without getting caught in Limbo for all of eternity is a feat that will require a measure of skill and intuition, not to mention good old-fashioned luck.

Considering the complexity of some of the solutions, the control system is remarkably simple. Nearly all commands are entered through a single joystick, and all of the player's options are conveniently close at hand. The solutions to the various puzzles in the game are complex, but fully logical at the same time; *Maxwell Manor* is not a simple game by any means, but it is a fair one.

> Maxwell Manor is the best horror-based computer game to date.

The game's graphics are above average; the dark earth-tones of the surroundings convey the gloomy, supernatural atmosphere of the manor very well. Gameplay is smooth and fast, though the player can stop and save the game for future play at any point. Over a thousand game variations ensure that players won't lose interest in the quest very quickly.

Though certain aspects of the game, especially the strange creatures roaming the manor grounds and the limit that allows a player to carry no more than four items at a time, seem like a throwback to the video game era (at times *Maxwell Manor* resembles that old Atari

VCS game, *Haunted House*), it is still brimming with excitement and enthusiasm. And what fan of Boris Karloff could turn down a chance to play a game with a Vampire Spider in it?

Maxwell Manor is really an excellent game. Just like another famous Maxwell House, *Maxwell Manor* is good to the last drop, though in this case, it's probably a drop of blood.

(Charles Ardai)

THE GAMES CREATOR

Designed by David and Richard Darling
Mastertronic, 1985/C-64/Disk/$22.00

Though arcade games have lost much of the popularity they once held, there are still some people who find it relaxing to settle down to a good game of *Donkey Kong* or stimulating to annihilate passing mutants in *Defender*. Unfortunately for them, those typical arcade-style action contests are becoming increasingly difficult to find amidst a growing market of more intellectual and complicated fare. Times are tough for the shoot-'em-up fanatics amongst us; for those of us who despair of ever seeing a laser blaster or a swarm of menacing aliens again, *The Games Creator* is a sight for sore eyes.

The Games Creator is a menu-driven construction set that allows users to design and play a variety of action games. Every aspect of a typical action game is taken into account, and the player can modify everything from the player's speed and number of lives to the musical soundtrack and sound effects that are to accompany the game.

Game creation is very simply done with this program; most important functions are controlled by a joystick, and the program is truly self-explanatory. The opening screen consists solely of a large branching menu which has choices like "Graphics," "Sound," and "Player" printed along various pathways. With a joystick, you just have to follow the path you want to work on with a little square cursor, and the chosen section is displayed on the screen, ready for use. It's as simple as that.

The Graphics section includes a good sprite and custom-character generator which makes designing backgrounds, enemies and characters as simple as typing a few keystrokes and drawing with the joystick. *The Games Creator*'s graphics system is very advanced, which is helpful since it lets designers give their games a polished, professional look.

The program handles all technical matters on its own, but it leaves all decisions up to the user. Also under the user's control is the program's music system; though it does come with some standard sound effects and musical scores, the user is invited to compose his own. The composing is aided by a surprisingly good, four-instrument

music screen — it may not be *Music Construction Set*, but considering the circumstances it is far above average.

Finally, games can be saved and then re-loaded at a later date, either for further editing or just to play. To give beginning designers an idea of the program's capabilities, *The Games Creator* comes with three sample games. The one loser of the bunch is a horizontal shooting contest called *Hawk Patrol*; the others — a combination maze and shooting game called *Snake Pit*, and an imaginative climbing game called *Bouncer* — are both enjoyable (if simplistic) games.

The Games Creator is an excellent construction set; my only gripe is with its choice of subject matter. Arcade games are fine as far as they go, but they don't go very far. The construction set would stand up to re-use well if it weren't for the fact that the games one can construct with it can easily become dull and repetitive after a short period of time. Still, *The Games Creator* does fill a void in the industry — it gives action-game players something to look forward to.

(Charles Ardai)

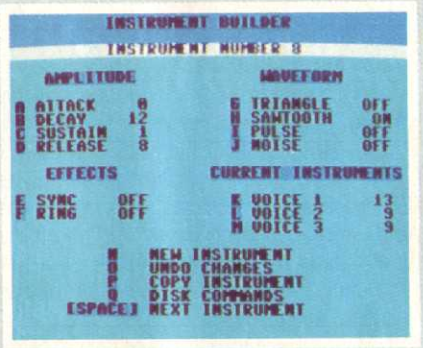
ALLEGRO

Designed by Bob Landwehr
Artworx, 1985/C-64, Mac/Disk/$39.95

At last, a music program that a musician can really use! In fact, this one is definitely *not* for beginners. It has no pretty graphics, no tutorials to teach you to distinguish eighth notes from quarters. It's simply a first-class synthesizer, on which you can compose, arrange, edit, play, and save music; and best of all, you can add the music to your own BASIC and machine language programs with amazing ease.

Instead of staff notation, *Allegro* uses a music language called FORTE, which is very flexible and easy to edit. You can save over a hundred screens full of FORTE notation on a disk. Before playing back, the program compiles the FORTE notation into a more concise language which the user never sees, but which the computer can read quickly, so that the playback is very high-quality. Music can be saved to disk in FORTE or in compiled form, but the compiled form can't be de-compiled. This means that if you lose the FORTE notation, you can no longer edit the music, though you can still play it.

FORTE is a little difficult to read at



first, but it gets easier. A one-voice version of the first phrase of "Mary Had a Little Lamb," for instance, would read: "V1 I1 T60 04/8 E D C D E E EQ". Translation: "Voice one, instrument one (a preset that sounds like a harpsichord), tempo sixty quarter notes per minute, octave four (middle C to B above), eighth notes unless otherwise indicated, E D C D E E E-quarter note." The notations can be entered anywhere on the editing screen, as long as there is at least one space between them. This allows you to use indentation or any kind of spacing that will make it easier to read. You can also include comments, which are ignored when the FORTE notation is being compiled. There are some editing functions, like deleting lines and adding blank lines, but it takes five steps to copy a line without deleting it. FORTE includes notations for rests, repeats, dotted notes, triplets, key signatures, ties, changes in pulse width, and many special effects, such as filtering, detuning, synchronization, ring modulation, and two bizarre effects, nicknamed "Phaser" and "Heavymetal."

There is a whole range of special effects called "modulations," in which the frequency and pulse width of any voice, as well as the filter-cutoff frequency, can be varied continuously, producing wah-wahs, vibratos, sirens, and other weirdness. The source of the modulation (i.e., what determines the value, from moment to moment, of the parameter being modulated), can be the frequency or envelope of voice 3, a game paddle, or one of 26 built-in low-frequency oscillators. This blew me away at first, but makes sense with a little experimentation.

The only major drawback I found in this program is that it takes three steps to switch from editing music to playing it back, and two to return to editing. A minor problem is that after exiting from the program, the computer won't load programs properly from a disk until it has been turned off and on again. Don't ask me why.

What really impressed me was how easy it is to add music to other programs. You simply save your compiled music on the same disk as your program, and choose the "passkey" option in the editing menu. This saves a machine language program onto the disk, which, when loaded, loads the music file and your program, and switches back and forth between them hundreds of times per second. The timing of the music is not affected by anything else going on in your program, with a few exceptions which are explained in the manual. You can, however, turn the music on and off from within the program, as well as switching between several musical selections.

The music is played on an "orchestra" of over 80 instruments, each with its own waveform, envelope, and filter settings. You can create your own orchestra, or modify and use the built-in one. Of course, you can use only three of the instruments at one time, but you can switch as often as you like. You can modify instrument settings and special effects, on separate "instrument builder" and "modulations" screens, while the music is playing, or test your settings with a keyboard option. This turns the top two rows of your computer's keyboard into a synthesizer keyboard. I suspect that the programming space for all these features was available only because it wasn't wasted on the graphics programming that would have been necessary for standard music notation.

The demonstration mode illustrates many of *Allegro*'s features, and includes lots of Bach, which is fine with me. There is also an imaginative setting of Rimsky-Korsakov's *Scheherazade*, which was certainly a surprise.

The documentation provided is thorough, clear, and friendly in tone. It clarifies things like filters and envelopes, and the style is as readable as any of today's popular science writers. Its only problem is its three-page explanation of standard music notation. It explains notation correctly, but too briefly to be of any use to anyone who isn't already familiar with it.

This is the first music program I've seen that I look forward to using after I've written the review.

(Henry Jones)

BLAZING PADDLES

Designed by Michael Darooge
Baudville, 1984/Apple II/Disk/$49.95

When you treat yourself to a graphics peripheral — a KoalaPad, a light pen, or an Apple Mouse — impressive software usually comes with the package. But when pixel Picassos attempt to create electronic masterpieces with their new tools, problems invariably begin to surface. The KoalaPad Software, for example, offers only eight color patterns, and has a magnified drawing mode that's difficult to control accurately. *Mousepaint*, the program packaged with the Apple Mouse, is an ingenious adaptation of Macintosh-style drawing capabilities for the Apple II series, but falls short in several departments: its inability to fill in areas after they're drawn and the ever-present menu border that prevents you from seeing the full-screen artwork are two of its major drawbacks.

Baudville's *Blazing Paddles* offers solutions to these problems: it's an illustrator program that combines the best features of the in-pack graphics software with some wonderful extras you won't find anywhere else. *Blazing Paddles* works with standard input devices (touch tablets, joysticks, light pens, mice) and has all the standard drawing features — freehand drawing, individual point plotting, straight lines and connected lines, filled and unfilled ovals and rectangles, color fill, text insertion, magnified editing, and a selection of brush sizes and styles.

Now we get to the good stuff — like the color-blending capability that lets you mix the eight basic Apple colors together in a variety of patterns, creating 200 possible combinations. And the ability to incorporate Apple shape-table figures into your drawings. The program comes with a library of 10 shape tables on the disk, each with an assortment of artfully-drawn images ready to be incorporated into your own work. Also included on the disk are five different typefaces. (Baudville also sells three optional *Shape Library* disks, containing hundreds of additional "clip art" images, and one of those disks holds a dozen more fonts.)

One of *Blazing Paddles'* best features is called "Windows." This allows you to cut out a section of the screen image and paste it into other sections of the picture as many times as you like. Even more interesting, windows can be saved to disk. This enables you to move artwork from picture to picture as well as develop your own library of picture elements. The "undo" feature is another highlight. If you make a mistake — even a real messy one, like giving a "fill" command that leaks all over your picture — just pressing the escape key will completely remedy the disaster.

Surely there must be *something* wrong with *Blazing Paddles*, skeptics will surmise. Well, there are a few niceties which could have been programmed in. For example, fill and line-drawing commands for use in the magnified mode would've been helpful. Also, the

ability to change the size of shape tables is missing. The latter is easy enough to accomplish in Applesoft BASIC, but isn't available in *Blazing Paddles*.

But these are just quibbles. *Blazing Paddles* is more than a useful addition to a graphics software library — it replaces a drawerful of graphics programs with one disk that does it all.

(Steve Morgenstern)

MACPUBLISHER

Designed by MicroCosmos
Boston Software Publishers, 1985/Macintosh 128K, 512K, Lisa, Macintosh XL/Disk/$99.95

It's no secret — designers know that jaded Mac-owners hunger for ever more inventive ways of sitting down to work (or play). *MacPublisher*, a new program for creating newsletters and brochures, should keep some of them happy most of the time. While not without shortcomings, this is a dynamic, innovative program which lets you write articles, copy pictures, lay out the elements on letter-size pages, shuffle the material around, and print the result.

MacPublisher's working metaphor is not the desktop but the drawing board. The program splits your screen in half; the right side becomes a miniature layout page while the left side keeps track of articles and pictures. You'll be amazed at how much you can fit on the screen at once.

The layout page is where the action is. You can view it two ways — as a "Mini Page" in which the contents are visible though not really readable, or as a "Dummy Page" which uses black and white rectangles to show the copy and art as design elements. Each article-rectangle displays its name, length and the possible continuation pages. Using the mouse, you can rearrange the page endlessly in either mode. A "Layout" menu formats the page in pre-set styles that range from three-column to free form.

You fill the page by opening either article or picture files on the left side of the screen. New articles can be written using a word processor very much like *MacWrite*, right down to the smorgasbord of typefaces and styles. With the text in hand, a click of the mouse on the gray background turns the cursor arrow into a tiny pair of scissors. You use the scissors to snip the copy into blocks that you mouse-drag directly onto the layout page. *Macpublisher* keeps track of leftover copy as you work your way through up to 32 pages. If you change anything about the type — such as its face, size or style — in either the text or the page file, the program automatically adjusts the other file. Need a headline? Create a new file.

The scissors also move pictures. But to make a picture file, you first have to copy an image from *MacPaint*, or any other Mac-compatible graphics program, onto the Clipboard. Then you use a desk accessory called the "Camera" to crop your picture to the right size and shape for your layout. One mouse click later, it's a new picture file, ready for dragging.

There are lots of other unusual, and valuable, features: You can shrink or expand the space between letters and lines of type by adjusting the type. A transparent vertical ruler measures depth in lines, inches and pixels. An indexer automatically sets the table of contents. The Print menu can run off articles in extra-large sizes so that you can photo-reduce

them for sharper reproduction.

These goodies exact a price. *MacPublisher* is slow, especially on a 128K Mac, and memory intensive. Though its designers must have stretched hard to cram all its features into a minimal system, I recommend working with it on a 512K with external drive. One more reason to upgrade.

Also, don't expect fine typography unless you have access to a Linotronic 300 Laser Typesetter. A LaserWriter will come close but if you're among the majority using Imagewriters, the quality you're aiming for is called "acceptable." You'll have to cope, as well, with a curious quirk of the system. Though *MacPublisher* offers two print levels, Standard and Final, pictures look better in Standard while text prints more clearly in Final. A carbon Imagewriter ribbon, also available from Boston Software, made no appreciable difference when I tried it.

Most users should be able to live with these limitations, provided that they understand them before taking the plunge. *MacPublisher* is a sophisticated program that operates very intuitively, in a way that suggests its makers spent a lot of time asking graphic artists what they wanted in a program of this sort. If you have anything to do with producing newsletters or mailers for a club or organization, it is definitely worth a close look. Even if you can't think of a good use, you can always lean back, push the mouse and tell yourself it's really just a game.

(Stan Pinkwas)

TYPING INTRIGUE

Forethought, Inc. 1984/ Macintosh/Disk/$49.95

Up until now, the greatest motivation for learning to type was the exercise. This, of course, was before Lord and Lady Southby so considerately provided you with an even better motivation—the theft of their ridiculously valuable 19th century bathtub on a night when only the Dunsmires were visiting. Finding out who took it is your job—Katherine Gibbs, private stenographer. It's up to you and your flashing fingers to uncover evidence and pin the rap on the right stooge. Even if you're truly maladroit when it comes to typing, it doesn't matter. With the help of this program you may go into the game a mere member of the secretarial pool, but you can come out an administrative assistant at least.

> "The copper piezoelectric telegraph bypasses zealous zucchini."

You solve the crime by typing. You type everything from standard finger exercises to impossible sentences like, "The copper piezoelectric telegraph bypasses zealous zucchini." The faster and more accurately you type, the more clue points you get. The more clue points you get, the more clues you can redeem them for and the more clues you collect. . .well, you get the point.

Typing Intrigue is broken down into several sections each designed to hone your skills in one area or another. First, there's "Basics" which teaches you how to sit, how to hold your hands and so forth. These instructions are all accompanied by cunning Macgraphics. "Basics" also includes "The Audition." What this does, basically, is depress you by telling you your typing speed and percentage of errors. You get clue points for going through this ordeal (small comfort).

Once that's out of the way, you get to practice your skills (as you, but no one else, calls them) on the keyboard. To do this, you can choose from two categories — "The Workout" (wait until Jane Fonda hears about this) and "Rain" (wait until Somerset Maugham hears about that). Each one is designed to drill a specific hand-part or skill. "The Workout" has several exercises for the index fingers, the left hand, the pinkies and so forth. Because not many words can be generated using the letters frftfgfbfv (left index finger), you are often called upon to type nonsense which is difficult but good practice, Lord knows.

"Rain" lets you practice typing random letters in a far cuter way. Letters are housed in raindrops which fall from the sky at varying rates depending on what sort of storm you've called up. Storms range from slight drizzles to monsoons. If you type the letters, they evaporate before they hit the ground. If you don't, they accumulate and soon you've got to say goodbye to the shag rug and head for high ground.

Each time you miss a letter, the computer beeps at you. You can turn this beep off but you deprive yourself of an opportunity for self-abasement if you do. A moving caret underneath the letters lets you know where to pick up typing after you've erred. You must hit Return after each sentence you type. After each particular drill, you are assessed anew and find that your typing has gotten worse.

At some point you will be able to turn your clue points in for a mystery clue. Each clue costs 20 points. This is a high price for clues that aren't very helpful and go something like this: "Lady Southby does not know why Deirdre Dunsmire is so distraught. Perhaps Dr. Greenley can help." This is not worth 20 clue points. 10, perhaps. Maybe even 15. But there is no "Haggling" option so you pay what's asked and hope you find out who this Dr. Greenley is later on.

Besides mystery clues, you can also ask to (1) see a Case Report compiled by Inspector Hargreaves (Scotland Yard, no doubt), (2) review clues you've already seen and (3) Guess Who if you think you know.

This is an excellent program. It's fun, it's educational and it introduces a novel concept to the world of educational programs: making the computer an intrinisic part of the game and actually taking advantage of computer power. It is also thought-provoking. The thought that it chiefly provokes is: How did someone get something the size of a bathtub out of the Southby mansion without being seen? Here's my guess: big pockets.

I confess that although I have burned up many typewriters in my career owing to the supersonic speed at which I type, I still have no idea who stole the Southby bathtub. I do, however, know, beyond the shadow of a doubt that frftfvfbfg are the letters I can reach with my left index finger and I can reach them fast and accurately. This is a skill that not everyone has. Personally, I would rather have the bathtub as it is valued at £50,000—which is more than you can make as a typist.

(Randi Hacker)

WIZARD OF OZ

Spinnaker, 1985/Apple, C-64, IBM PC/Disk/$26.95

I must admit that I approached this program with some trepidation: L. Frank Baum's series of *Oz* books has been my favorite since I was seven years old. So let me say right off that this addition to Spinnaker's excellent Windham Classics series is the best so far. It is obvious that a lot of loving care went into the creation of this program, and it really pays off.

Not only are all the familiar characters from the famous movie present, but there are also many characters from the other *Oz* books as well. After you — as Dorothy — and Toto collect the original crew, you'll also run into Jack Pumpkinhead, Mombi (a nasty piece of work for someone who's not even a witch), General Jinjur, the Hammerheads and Tip — among others. This is a particularly delightful touch because it makes the game more interesting. One risk in basing a game on a well-known book is that players come to the game already familiar with the plot. Spinnaker has preserved the plot beautifully, but has also guaranteed a high interest-level by importing characters from other *Oz* books.

The graphics are wonderful, too. They look very much like the original book illustrations. So don't be surprised if Glinda looks as if she's put on weight. If you prefer Billie Burke — or the more elegant Glinda of a later illustrator — you can toggle the picture off altogether. I recommend keeping it on.

The gameplay is more or less like any graphic-text adventure you've seen. You have to explore everything and gather together your troop before you'll be able to get very far along the road to Oz the Great and Terrible. I found a few anomalies in the commands — I had to say "TAKE TIP" to get him to join us, for example — but I was playing with a test disk, so things like this will no doubt be cleared up by the time you play it. (Be sure to take Tip any way you can get him; he might come in handy.)

One of the most useful aspects of the gameplay is that when you're confronted with the dreaded "TRY SAYING THAT DIFFERENTLY," you can type "WORD" and you'll get a list of legitimate words and commands on screen. The support material also includes a complete list of words and characters, but the "word" command saves a lot of page-turning and frustration.

Another welcome touch is that you can't die. If you try a dangerous move, one of your companions will snatch you back just in time. Neither can you kill anything (with the exception of witches): as the program will tell you, you're a guest in this country and "it's not polite to maim one's hosts." You can, however, call upon your friends to scare off any nasty-tempered characters you run into. There is one ambiguous instance where asking the Lion to attack gets you a finger wagging, but the Tinman can swat the enemy with his axe. Frankly, I was so happy to get out of the situation, I didn't care who did the actual saving.

The only disappointment I found in the program at all is that Tip (a boy) doesn't turn into Ozma (a girl, and ruler of all Oz) at the end, as he does in *Ozma of Oz*. But, purist though I am in these matters, it was a *very* minor disappointment. I can't recommend *Wizard of Oz* strongly enough: it's fun, charming, lovely to look at and just might send some players off to find the original books. What more could you possibly want from a program like this?

(Louise Kohl)

EAT N.Y.

K.I.N., 1985/Macintosh/Disk/$39.00

Just to set things straight right at the beginning: *Eat N.Y.* is *not* a sequel to *Save N.Y.* It is not an arcade-type game at all. It is, in fact, a comprehensive guide to every single restaurant in New York City and the Boroughs. No kidding.

At first glance you may think "Oh wow! (or, if you're a member of a previous generation, Groovy!) — a computer program that lists all the restaurants in New York City, rates them on a scale of one to four stars, comments verbosely on the quality of their cuisines and provides you with other pertinent information such as telephone numbers, address, cross street and whether or not they accept credit cards." You may even fantasize briefly about how great it would be after spending the day in Tribeca to flip through the restaurant listing and choose one in that neighborhood that suits your fancy. But it will soon dawn on you that (1) you rarely have your Macintosh with you when the urge hits you to eat after a day of schlepping around the city, and (2) anything that claims to be a comprehensive list of restaurants in New York is obsolete by the time you say "Dig in!"

Even though it's a silly medium for restaurant listings, *Eat N.Y.* is still a pretty impressive compilation. Here's how it works: Using the mouse, you enter the criteria you require in a restaurant — type of food (Chinese, American, African, Thai, Diner, Deli, etc.), price

range, geographic location, rating and whether or not it accepts credit cards. Then *Eat N.Y.* will search Manhattan and (if you've said it's okay) The Bronx and Staten Island too, for restaurants that meet your criteria.

If you already know which restaurant you want to eat in and just want some specific details about it, you can get this information by typing in the name of the place. *Eat N.Y.* will then present you with a list of all restaurants with that name. After you find the one you meant, you just click the Display function and read all about its unique ambience and cuisine.

Speaking of ambience and cuisine, there is one other drawback which really must be mentioned here no matter how painful: inaccuracy. I was looking for a good Chinese restaurant in the West 50's that accepts credit cards. I fed in all the data and *Eat N.Y.* came up with Chin Ya on West 55th Street near 7th Avenue. According to the icon (a little pagoda), Chin Ya is a Chinese restaurant. Here is the description of the cuisine: "Good Japanese food in what is unfortunately a filthy setting. Stays open late; the chic crowd from nearby Studio 54 used to make this place the place to have sushi at midnight." What's wrong with this picture? If one mistake like this exists, how many others might there be?

Eat N.Y. is good at finding restaurants by their names, but not using more ambiguous information. Entering type or area usually gets you "no restaurants meet your criteria."

You can add restaurants to the files, and modify existing files to comply with your own opinions. Naturally, the first thing you'll want to do is create a totally fictitious restaurant called Jamal's All-Night Sushi Bar and Nautilus Club on 113th St. After you've played like this for a while, it will wear thin. However, being able to add to the list is a smart option, given the speed with which restaurants close and open in this burg.

Although a book is easier to carry around and just as comprehensive, there is one thing that *Eat N.Y.* can do that *The Underground Gourmet* can't. That's make reservations. If you have a Hayes modem, you can use an autodialer function to have the Mac call the restaurant you've chosen so you can make reservations. Call Jamal's. See what they're serving tonight.

(Randi Hacker)

MAGIC CARPET

Designed by David Darling and Richard Darling
Mastertronic/C-64/Disk/$9.99

How would Aladdin have felt if he feverishly rubbed his legendary lamp and came away with nothing but friction burns? This question is bound to come to mind after a round with Mastertronic's *Magic Carpet*. This contest shines with plenty of promise, but in the end, it leaves you unfulfilled.

The object is to guide your Arabian surrogate, who rides perched atop a bewitched broadloom, through three cavernous screens in search of a stolen family heirloom: the magic lantern. This well conceived aerial obstacle course is fast and furious, full of perilous pitfalls designed to test your adeptness in a full array of arcade-style skills.

In the entry grotto are gravity-defying bouncing boulders, pistoning spears and a moving saw-toothed ledge — all trying to undermine your mission. Round two throws you into a bat-filled lair, where you have to use strategic synchronization. You finish off in the den of a flame-spitting dragon — make sure your reflex reactions are razor sharp.

On the positive side, this physical arrangement is both thought provoking and involving. Many apparent impasses require coaxing and several trial-and-error approaches before the correct route is discovered. You might have to invest hours of practice in discovering the itinerary that keeps your rug from unravelling. And then comes the moment you've worked hard for: when all your time, courage, and heroics will be rewarded with. . .nothing.

And I mean nothing.

No extra life, no heightened conflicts, no additional antagonists, no fanfare or visual starbursts. You're just blinked back to the starting block of screen one and asked to repeat your task. And it's all such a shame, because the initial trip, which was such a stimulating challenge, is reduced to a redundant, pattern-filled anti-climax.

Even if you stick it out, and continue sailing forth, another disturbing problem soon arises with the scoring system. As you enter each screen, a timer above the playfield ticks down as the action starts. When you complete a round, your score will be the number of units left on the clock. So, if you are initially alloted, let's say, five thousand seconds, and it takes you two thousand seconds to traverse a cavern, your score would be three thousand. So far, so good.

But you are also rewarded the remaining seconds if you don't finish the screen. So, just for scoring sake, it can be advantageous to intentionally crash. This would give you a higher total for stopping the clock faster; a bounty that goes against all competitive logic.

Some may find the bargain price reason enough to give this program a shot; I guess it's not such a bad buy. But I'm afraid Mastertronic's *Magic Carpet* wears thin rather quickly.

(Mark Cotone)

RIPPER

Designed by John Winnie and Stanley Baronett, Jr.
Avalon Hill/C-64/Disk/$29.99

I was expecting trouble, but nothing like this.

I had just landed in Victorian England, cast as a detective. There I stood, at the entrance of Homestead Manor; the elaborate Estate of Lady Wanda Millerford. At Her Majesty's request, Lady Wanda has gathered together some of the greatest minds of the time to devise a masterplan to thwart Jack the Ripper. I had just paused in the mansion's foyer, wondering how the Ripper himself had somehow infiltrated this meeting, when I came across my most powerful enemy — a nemesis so overwhelming that I almost shut down my computer.

I'd run against an archaic parser.

"You are now in the foyer with a staircase to the north," it said.

"Go north," I replyed.

"You must use the stairs."

"Okay," I instructed, "Use the stairs."

"I don't know the word 'okay'."

"Use the stairs."

"You can't use that."

"Arhgh!"

And so it continued. A putative genius of the deductive method, about to meet head-on with the most celebrated criminal of the century, and I can't get up a flight of stairs.

Is this what the instruction manual meant by "large but limited" vocabulary? With the advanced command techniques used in text games today, this linguistic restriction is severely out-dated, and worse still, it runs the risk of sinking any program into mediocrity. As I reluctantly pressed on, I admit, I wasn't holding much hope for a successful conclusion.

However, in a testament to the quality of this contest, *Ripper* manages to circumvent its own limitations. Its salvation comes from its ability to create intriguing environments, where fact and fiction mix to produce a complex world that keeps you thinking, guessing, and anxious for more.

Certainly, all the usual staples of role-playing are included, and you'll certainly be called upon to show your stuff: go everywhere and trust no one. However, Avalon Hill has added a few more unusual touches to *Ripper*. The sound, for instance, does more than just provide background. Sure, there's appropriate slow, bass-toned music, reminiscent of the ominous drones of thriller movies. But there're special sound effects as well.

Pry open an overhead metal grate, and listen to the hinges bend and snap; move closer to the fireplace and the flames roar and crackle; and in one sequence, when the lights go out and a substantial witness is abducted, the screen goes blank, and you can hear a crash followed by the diminishing pitter-patter of footsteps.

The various characters invited to this meeting are also intricately intertwined into the mesh of *Ripper*'s overall plot. Each person has a historical importance that is essential to the plot — and they remain anonymous until you can identify them by asking for their assistance in solving a related puzzle.

> *Ripper* creates a complex world that keeps you guessing and anxious for more.

But perhaps the most involving aspect of gameplay is the fact that the villain in this contest actually existed — a living, breathing maniac. This brings to the game an air of brutal mystery with supernatural overtones. The frightening atmosphere surrounding the crimes of the original Jack the Ripper is carried over into the game. When I finally stumbled into the room where Jack was storing some victims, I was genuinely shocked, scared, and hooked for good.

Avalon Hill also includes a sealed envelope of clues, only to be opened if you become hopelessly stuck. There's more fun in trying to get by without it. It only has a floorplan and a list of guests, both of which can be discovered on your own.

With all the technical flaws of the parser, the game's credible atmosphere alone makes it worth your time. *Ripper* is one of those good games that make you wish its designers had tried a little harder.

(Mark Cotone)

KEYBOARD CRAZY

Designed by Borges & Higgins
Waveform, 1984/C-64/Disk/$24.95

Keyboard Crazy (with the Treble Clef Cat) is a music learning program for children ages 4 and up. The four music games are fun and easy to learn, and the sound is quite good. Unfortunately, some of them require a keyboard overlay, and the overlay included in this package is a disaster. This is a prime example of admirable programming frustrated by poor support material.

First of all, any of the four year-olds I know can destroy a cast-iron truck in under an hour; I figure a cardboard overlay would disappear in seconds. And trying to get the overlay to stay on the computer keyboard is like putting a top on Tupperware — as soon as you get one side down, the other pops up. The program also runs on Waveform's Colortone Keyboard, but unless you have other uses for a peripheral keyboard, it seems an excessive expense for one program, however good. The instruction book shows you which computer keys correspond to the musical keys; perhaps it would be best to mark them with stickers and dispense with the overlay altogether.

Only one of the four games on the disk, "Sneak-a-Peek," does not require the overlay or a substitute. It is a "Concentration"-type matching game in four parts: face to face (the keys on the overlay have kids' faces on them), note-name to name, staff to staff, and staff to note-name. You move a hyperactive little mouse around with the space bar and press the F7 key to see what's hidden in a square. There's no penalty for wrong guesses, and I got the same triumphant fanfare for finishing a board in 44 tries as I did for 24. This is an encouraging touch for young children — and for grownup music-illiterates like me.

The "Melody Machine" part of the program lets you or your child play any music you like, by turning your computer into a two-octave "piano." When a note is played, it appears on the on-screen staff and keyboard. This section is particularly hurt by the flimsy keyboard overlay.

"Copy Cat" is my favorite part of the program. You pick a melody from the menu and a staff appears on-screen with the Treble Clef Cat. The program plays the first note of the song and gives you a

chance to echo it. If you do it correctly, it will play the first two notes, and so on. (Try "UFO" — it could come in handy if you ever have a close encounter.) The computer is endlessly patient, and will play the notes over and over until you can play an entire song. You can also choose to play with random notes in this section, but I found the songs more satisfying (and easier). Perfect pitch won't hurt, either.

The last game is "Mouse Maze," in which the mouse you met in "Sneak-a-Peek" plays Pac-Man — with a musical twist. The mouse can maneuver the mazes by himself, but he runs up against note names which block his progress until you play the correct note. You have to be fairly quick at getting the note or you lose points. I suspect that this game will be the most popular with younger children.

Keyboard Crazy is a very good program for pre-schoolers learning music; it's not too difficult and should give them a basic knowledge of where notes appear on the staff and what they sound like. If it weren't for that keyboard, I'd recommend it without reservation.

(Louise Kohl)

F-15 STRIKE EAGLE

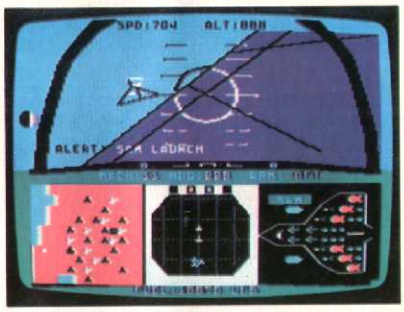
Designed by Sid Meier
MicroProse, 1985/
C-64, Ap, At/$34.95

You've successfully bombed Colonel Qadaffi's Libyan Air Command Center, but your fuel is low and you've been hit. Your missiles and bombs are exhausted, and there's a Soviet-made MiG-23 flying up your tail. A red glare lights up the canopy. Warning horns wail and damage status messages flash. Another hit! Time to bail out. . . too bad, you were too low to survive. Guess you're not the Ace you thought you were. You may be a while in earning your wings, but MicroProse certainly has a winner in its *F-15 Strike Eagle*.

There's no waiting around for combat action. Just strap yourself into the ejector seat and enter the top-secret authentication code. As soon as you get in the cockpit you're facing an enemy who is as eager to shoot you down as you should be if you're to survive.

From the illegal secret night bombing of North Vietnam in 1972 to daylight raids into Iran to protect Persian Gulf shipping, the real-time scenarios and sophisticated control options make this an exciting strategic game. The instructions outline each mission, including an analysis of the situation, potential threats and a flight plan advising you on altitude penetration, primary and secondary targets.

The on-screen map shows both the enemy's and your position. Place the navigation cursor over the primary target, and follow the flashing "NAV" to your objective. A radar screen, set up in ten-mile grids, shows you the on-coming target and enemy aircraft and missiles. If



this is too much for your eyes to follow, warning tones alert you when danger is closing in.

Radar homing SAMs (surface-to-air missiles) and air-to-air heat-seeking missiles from enemy fighters are bound to harass you. Luckily, the F-15 is equipped with defensive measures to deal with these annoyances. Let off some electronic chaff to jam the radar or shoot a flare to decoy the heat-seekers. It's best to destroy the SAM sites and enemy air fields as you fly to the prime objective so that you avoid attacks on the trip back.

Your own craft is also armed with short-range, heat-seeking missiles and medium-range, radar-homing missiles. These weapons can be used without careful aim — even if enemy jets approach you from the rear. It's at the controls of the 20-mm cannon that you really have to be precise. However, the biggest challenge is in coordinating the bombing run.

Activate the bombing sights, and speedbrake your craft as you approach the target to give yourself more time to aim. Then roll into a dive, aim, release your payload, and don't forget to pull up before kissing the ground. Hit the afterburners, drop the empty fuel tanks, and you can head for home.

The program lets you pause the game so you can check up on all those rules you didn't bother with the first time around. In fact, you'd better keep the manual handy so you can find the authentication code (randomly generated each time you boot the disk) which is necessary to gain access to many of the weapon and flight systems. The instructions also include a short tutorial on aerodynamics.

The only problem I find with *F-15* is the absence of a takeoff and landing simulation. If MicroProse had left out the cute touches like the authentication code, streamlined the radar features, and cut a scenario or two, maybe you'd even have been able to take off from the aircraft carrier Nimitz. In any case, while not true to the Air Force's $20-million model in every detail, *F-15 Strike Eagle* is close enough — and a lot less expensive.

(Ben Templin)

THE TRIVIA ARCADE

Designed by Randall Don Masteller
Screenplay, 1984/C-64/$34.95

You can't blame the Commodore 64 for the painfully slow action in *Trivia Arcade* — it's without a doubt the worst-structured trivia game I've seen, on or off a computer. While it's true that most trivia games take awhile to complete — the board game that started the craze being the prime example — there's no excuse for this inane gameplay. *Trivia Arcade* takes the worst elements of a skill and action game, adds poorly worded trivia questions, and then makes you wait through a superfluous gameboard sequence.

Don't expect dynamic action on the arcade screen. There is no progression; you simply shoot icons representing the different categories — sports, music, TV, science, and general. If you don't have a color monitor, it may be difficult to differentiate the basketball and record icons. You lose a turn if the time limit expires before you hit a category.

Once you've chosen the category, a question appears. The questions themselves also detract from the game. From the television category: "The Lancer Ranch was in state?". "Of desire" is not the answer; the computer didn't see the humor of my response either. There is no time limit on answering the questions — it's not even an option on the menu.

If you answer the question correctly, you progress to the gameboard, where diamonds hide the letters T, R, I, V, I, A. You travel diagonal lines from your home base, and get a chance to reveal the letter behind a diamond with each correctly answered question. You can foil your opponent's strategy by moving onto his color-coded letters. Once you've collected all the letters to spell "TRIVIA," you go to the Challenge Arena. In the arena, you must correctly answer one question from each category. The first player to do so is the winner.

Trivia Arcada boasts of having over 3,000 questions, which is actually a little less than average for computer trivia titles. Additional question disks can be purchased covering the categories of literature, history, movies, and comics.

Carnival music plods along as you make your way through this interminable game. The overly cute jingle is like an organ grinder's repetitious theme — without the monkey. The sequence changes are accomplished by screen wipes which only add to the waiting time.

The only sensible portion of the game is the option menu. In addition to the standard number-of-players choice (one to four can play) and whether to display the answers, Screenplay allows you to choose whether to answer the questions in a multiple choice format or input them — an option not found on many other computer trivia games. You can also switch off the arcade portion altogether, which is a real relief, though you still have to wait while the computer randomizes the categories.

In any case, no matter how thoughtful the options are, they are far outweighed by the negative trappings of arcade play within a thinking game. The ultimate option is not to play it at all.

(Ben Templin)

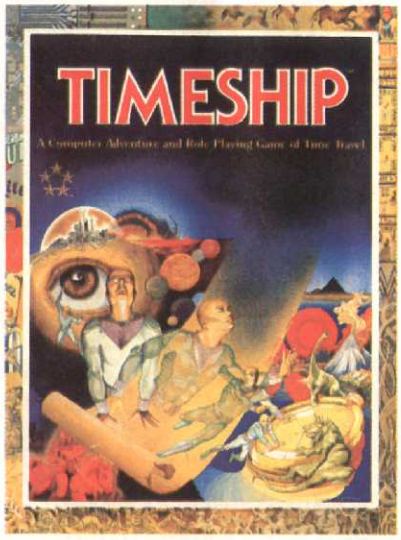
TIMESHIP

Designed by Jamie Su
Five Star Software, 1984/
Apple II series/Disk/$44.95

Experienced game players will immediately recognize this game as a computer adaptation of the famous *Timeship* gaming system published by Yaquinto. This role-playing system stretches throughout time and involves both historical and fantasy adversaries.

The program is built around a main module, which contains the Time Travelers' Guild Hall, and separate add-on scenarios, called Time Capsules. A novice level Time Capsule, "Murder At The End Of Time," has been included with the main module, just to get the system of the ground and to acquaint new players with the game.

Up to four people can generate characters and journey together. When you visit the Guild Hall, you'll find yourself in a somewhat bewildering complex of domes and areas. Off the Central Dome, you may choose to enter the Archive (for character generation and record keeping), Cubicle (where characters



sleep between assignments), Trade (outfitting and banking), or the Ritual Dome (to enter the Timestream). The game is fully menu-driven, so every step of the way, you just select what you want to do next. However, in some of the segments, a new player can get a bit lost in the nested menus. Coming back up to the Central Dome from a couple of these extended menus could give you the "bends."

Because this is to be the master module for a large projected series of Time Capsules, each of the weapon, armor, and equipment stores are bulging with assorted items from the far-flung reaches of time — it is the Abercrombie & Fitch of the future. Here, unfortunately, one of the two major flaws in the game surfaces. Only a couple of items available are suitable for the enclosed Time Capsule; the rest either vanish when you enter the Time Stream, or are non-functional when you arrive in the scenario. Before the actual play of the adventure scenario, you have no real idea which items are useful. An incredible amount of time is wasted generating characters, buying goods, going back into time, and discovering which ones work. After each quick trip to sort out the equipment, you must go through the deletion process for your now penniless characters, and generate a whole new party. This goes on for many hours, until you finally discover which goods are needed for this scenario. It would hardly have lessened the enjoyment of this first adventure — especially since it's a beginner scenario — if Five Star had included the correct shopping list for the player.

Once back in time, the player is involved in solving a rather clever murder mystery. The game is in the form of a hi-res adventure with some of the residents on time tracks, so you have to be in the right place at the right time. The correct solution to the murder, which the player must type in at the end, is not really obvious. The mystery is multi-layered, with hidden clues abounding everywhere.

Most of the puzzles are elementary and suitable for a novice scenario. There is, however, one incredible puzzle which qualifies as the second major flaw in the game. At a late point in the game, an item must be bought with a nickle, but there doesn't seem to be any money available in the game. There is, however, a change machine available. So where to find some other form of currency to put into the change machine? The answer lies in an ordinary book. The player is somehow supposed to divine that he must "tear page out of book" (a "get page" does nothing), "fold page," and then "insert the page into the machine." Out rolls the nickle. Now the author apparently intended this to be a difficult puzzle, but in fact it is logically absurd. Puzzles of that sort tend to alienate players.

Overall, the *Timeship* system offers a wonderful gaming structure. Yaquinto has had many ardent followers of the game for years. While this first scenario may not be everyone's cup of tea, it is the master module for other Time Capsules planned for late '85. These expanded scenarios, based on proven Yaquinto modules, should prove challenging to all levels of players.

(Roe R. Adams III)

WISHBRINGER

Designed by Brian Moriarty
Infocom, 1985/Most systems
Disk/$39.95

Infocom's latest is an introductory-level adventure game written by a new addition to the company, Brian Moriarty (naturally nicknamed Professor Moriarty), who brings with him a fondness for Lovecraft, Hawthorne, and things that go bump in the night.

Wishbringer is a story about what happens to a child who helps deliver the mail in the small, rural New England town of Festeron. Today you're bringing a special delivery letter to an old woman who runs a magic shop. An ancient enemy of the woman has stolen her black cat, and is demanding the fabulous Wishbringer Stone in return. Somehow you get drafted as hero of the day, and embark upon a fantasy quest to rescue the purloined feline.

When you step out of Ye Olde Magick Shoppe, the world is somehow different. A dense fog covers everything and a sinister tower stands where the Post Office used to be. Climbing safely down the hill in the fog is an adventure in itself. At the bottom of the hill, a nasty surprise awaits — a troll is guarding the only bridge back into town. Dealing with the troll opens a whole can of worms, for you soon discover that the town across the bridge is no longer safe, comfortable Festeron, but is now Witchville.

Witchville seems to be a sinister, cloudy double of Festeron. Most of the buildings are in the same places, but they're now evil caricatures of their former selves. It is up to you to solve the mystery of this transformation. To aid you is Wishbringer, the Magick Stone of Dreams. It will grant seven different wishes, but only with the aid of certain props, such as an umbrella, a horseshoe, a conch shell, or even a piece of candy. Receiving periodic advice via a phone inside a conch shell has a delightful *Get Smart* quality to it. Graveyards are very terrifying after this transformation, and wait until you see the local arcade parlor. The movie theater shows only the far-, far-outest films in 3-D. And in the end, only you can decide what's a dream, and what's real.

Wishbringer is a delightful beginner's level adventure. It's a great introduction for newcomers to the Adventure Experience, and is suitable for all ages. A seven-year-old boy had a delightful time playing the game — and even finished it.

Infocom's writers have always been noted for their wit (or is it wits?), and Moriarty seems an eminently qualified citizen of the Underground Empire. It is not every day that you find that the opposite of cosmic evil is that shining paragon of virtue, the U.S. Post Office.

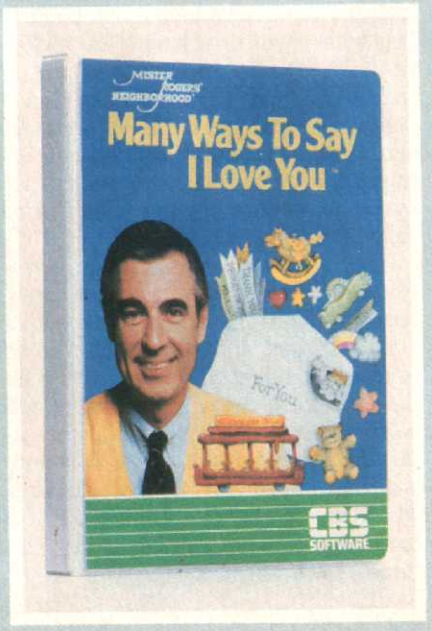
(Roe R. Adams III)

MANY WAYS TO SAY I LOVE YOU

Designed by Looking Glass Software
CBS, 1985/Apple II series, C-64/Disk/$29.95

My six-year-old nephew calls this program "computer stickers," which is as good a description as any. He likes it a lot. I have to trust him on this, because the program's appeal is lost on anyone over eight. This is, indeed, one of the many ways you can say "I love you," but personally, I prefer the kind that comes with a hug.

Many Ways to Say I Love You comes to us direct from Mr. Rogers' neighborhood, and it shares that locale's atmosphere: sweet or saccharine, depending on your point of view. With it, you create an electronic greeting card — complete with envelope. The program is menu-driven, mostly using colorful icons, which makes it simple for a preschooler to read. You can add and erase stickers, draw original designs, and choose borders and backgrounds. The graphics are all very appealing and childlike. And the program is simple to use. Even a very young child should be able to use it with a minimum of adult help. This is a plus, since some of these messages are very private, such as, "I need a hug."



When you've finished your greeting or message, you can also add music — there's a selection of familiar tunes — and animation. Then all you have to do is get the recipient to come to the computer screen. (You can save your messages to disk, too, in case Mom is too busy to look right now.)

Many Ways to Say I Love You also comes with a program guide which includes suggestions for activities the whole family can get in on. Now that's the kind of "interactive" software I like to see.

Can you say cute? Sure you can.

(Louise Kohl)

WILLY BYTE IN THE DIGITAL DIMENSION

Designed by Murray Krehbiel and Greg Hammond
Datatrek, 1984/Apple II series/ Disk/$39.95

Willy Byte in the Digital Dimension is a computer hacker's dream of Buckaroo Bonzai. Designed as both an educational tool and an enjoyable game, this program takes the player deep inside the Apple computer to explore the machine's electronic byways.

The game begins at the computer's CPU or Central Processing Unit. This is the computer's idea of Grand Central Station. Since the computer only functions with input, let's select the keyboard. Your character, Willy Byte, shows you how letters and words are transformed into binary code (the internal language of the computer). The binary bits are then fed into the I/O tube on their way into RAM.

This is where the simulation gets a bit bogged own in ultratech. Enter the villain of all honest, upright programs, Hex Luthor. He will try to sabotage your efforts with an assortment of dirty tricks. The heat lamp will play havoc with the computer's controls, a magnet will change the values of bits, water short-circuits everything, and static looks like

a tactical nuclear weapon was detonated inside the computer. Somehow, Willy must take the emerging bits from the I/O tube and lay them out in the correct sequence in RAM, while neutralizing all the machinations of Hex Luther. It may take the nonprogramming player several run-throughs of this section, and more than one careful reading of the manual before it will become understandable. But the effort is worthwhile, because afterwards come the delightful disk drive simulations.

The operation of the disk drive provides the best animation graphics in the whole program. Children will delight in coming back to this section. Now we finally know what the disk drive is doing when it grinds and groans. All this time we were worried about something dreadful happening inside the drive. Little did we realize what fun it was having.

Other segments of the simulation involve the power supply and the clock. The program also supports the Mockingboard, so really super sound is available to those fortunate enough to own that sound/voice add-on board.

This program can be enjoyed and taught on many levels. It is first and foremost a clever arcade game. Secondly, it is the best simulation to date of how a computer actually operates. Third, it is well designed to fit right into the school classroom. This program could be a springboard to many avenues of instruction. It deserves an appraisal by parents and educators to see if it might not fill part of that vast void out there called "Educational Software."

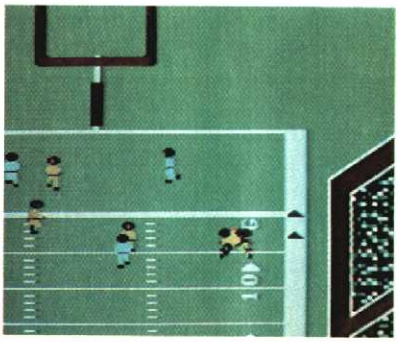
(Roe R. Adams III)

ON-FIELD FOOTBALL

Designed by Scott Orr and John Fitzpatrick
Gamestar, 1984/C-64/Disk/$31.95

One glance at *On-Field Football* gives Gamestar's game plan away: When it comes to sports simulation, more is more. Bobby Hebert led Michigan to the first USFL championship with the playbook taped to his wrist; if he'd been playing *On-Field Football*, he would've had to tape it to the center's back — it's that big.

There are four offensive formations (besides kicking), and in each you have to program two players before the snap, and control another during the play.



Let's say you want to throw a pass. Choose either split-left or slot-right formation, and send the wide-out and the tight end on one of four pass patterns. When the ball is snapped, you use the joystick to drop the QB into the pocket, and throw to the open man — or scramble for the first down. The running plays are pretty much either student-body right or left (what else can you do with four players?), but you can always send the tight end out in the flat, or throw a screen to the halfback. Defensive formations are almost as complex.

But I'm getting ahead of myself. You can't even start the game until you decide how long you want to play and whether to go up against a friend or the computer, and choose-up sides. That's right, you can pick between two teams of disparate talents — one run-oriented, the other pass-happy. And you can switch mid-game, if you want to play ball-control or run the two-minute drill.

When you're just learning the game, make sure you have another neophyte to play with — you can't handle the computer team. The *On-Field* team is so good that if you beat it, you can join Gamestar's club, and get a nifty membership card. But when you're starting out, it's tough enough to choose your formation in the 30 seconds you get before being called for delay of game.

The mechanics of this program are excellent: you have extremely accurate control of your players, with almost instant response, and the graphics are colorful and detailed. If you're looking for the most challenging and realistic football program around, look no further — this is it. Personally, though, I'd rather play the old Atari arcade football game, which was as easy on the mind as it was hard on the palm (thanks to that torturous trackball).

(Dan Goldberg)

RENDEZVOUS WITH RAMA

Designed by Arthur C. Clarke and Byron Preiss
Telarium Software/
C-64/2 Disks/$32.95

Rendezvous With Rama is based on the science fiction novel by Arthur C. Clarke about Man's first contact with an extra-terrestrial artifact — a giant, cylindrical generation ship called Rama.

You are the captain of the Endeavor, the only ship close enough to — you guessed it — rendezvous with Rama. The alien ship will drift out of our solar system in a few days, so you have only a short time to explore it. You are the only one to enter the ship, but you can stay in contact with your crew via a communicator. This lets you ask the crew for advice.

The game combines text and graphics, but the graphics, though well designed, are static — they don't change as the game progresses. From the bridge, for example, you see a giant video screen, which shows Rama far off in space. Even after you have landed on Rama, it still looks far away. In the storage room you see a space suit, and it remains in the picture even after you put it on.

Rama has two major faults. The worst problem is that most of the puzzles don't require thought, just random guessing and hit-or-miss experimentation. Or you can check the hint booklet, which (along with some maps) comes with the game. It won't give you the exact command, but it tells you enough — often too much.

The other problem is with the two action sequences. These are mini-adventures which you come across in the course of the game. (There's also a command that lets you practice them separately.) One makes you land Endeavor on Rama by piloting it through asteroid-infested space. All the action sequences do is waste game time and frustrate those of us who are anxious to get on to the next puzzle.

While *Rendezvous With Rama* is a pretty good game, it's more mechanical than intellectual. It won't appeal to fans of the Infocom games, who will find its puzzles too arbitrary. But if you enjoyed the book, you'll want to play the game — if only to discover Clarke's new, surprise ending.

(Michael A. Burstein)

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Call the computer using the toll-free number. The computer will ask the questions below. You respond after each beep tone by entering the appropriate numbers on your touch-tone phone. After responding to each question, press the star button (*) to signal that your response to that question is completed.

A. Computer asks:
Enter your Control Number 9 0 6 9 5 0 7 *
(Enter the 7-digit number at right.) *(Remember to press *)*

B. Computer asks:
Enter your Identification Number _ _ _ _ _ _ _ _ *
(This is the 7-digit number—following 9C—found at the top left corner of your subscription mailing label. If you are not the addressee on the label, do not enter ID#. Wait for the Operator to intercept.)

C. Computer asks: Please enter answer 1
(Enter the 2-digit numerical response.)

1. What computer do you currently own? _ _ *

11 Apple	*13 Commodore*	*15 Other*
12 Atari	*14 IBM PC*	*37 No response*

Computer asks: Please enter answer 2
2. Which peripherals do you currently own? _ _

16 Disc Drive	*19 Modem*	*22 Light Pen*	_ _
17 Printer	*20 Mouse*	*23 Controllers*	_ _
18 Monitor	*21 Floppy Disc*	*24 Keyboard*	_ _
		37 No response	_ _ *

*(Enter all that apply in a continuous number. Press * after last selection.)*

Computer asks: Please enter answer 3
3. What is your age? _ _ *

25 Under 17	*27 25 to 29*	*37 No response*
26 18 to 24	*28 Over 30*	

Computer asks: Please enter answer 4
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29 Yes *30 No* *37 No response*

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E. FINISHED WITH YOUR CALL?
Push the # button twice (##), then press * and your call is complete! # # *

Reader Service Information for this issue expires September 11, 1985.

MacStuff

What's New for the Big Apple

Hello! This is Gordon McComb. I'm not around to answer your call, so the me you hear is magnetized on tape. If you want to talk to me, and assuming I want to talk to you, leave your name, number, and message after the beep."

Sounds like a typical phone-answering machine message, right? Not quite. Instead of hearing my cheerful, human-sounding voice, friends and relatives who dial my number are greeted by a rather inhuman-sounding machine — an Apple Macintosh to be exact.

How did I do it? At the heart of my secret is a program from First Byte called *SmoothTalker*. It takes words typed into the computer and turns them into speech. So, I simply typed in the message, placed the answering machine microphone next to the Mac's speaker, and recorded the message. (My Mac doesn't answer the phone, though I could rig it to do that by adding a few other odds and ends.)

Okay, I'll be perfectly frank: Voice synthesis is nothing new. Home and business computers have had the freedom of speech for several years. But until now, most computers have required external — and often expensive — circuitry to generate an intelligible synthesized voice.

Not so with the Macintosh. Built into it is a digital-to-analog converter system that converts binary data (1's and 0's) into sound. With the Mac, that sound can be speech, sound effects, even four-voice music. While many computers have similar sound-generating capabilities (the Apple IIe and Commodore 64, for example), what's built into the Mac is especially suited for high-quality synthesized speech.

The Mac's voice capabilities are one of its many hidden features, and though the computer has been out for over a year, few companies have taken advantage of it. . .yet. *SmoothTalker* is the first — and so far only — text-to-speech voice synthesizer program for the Macintosh. Compared to those pricey hardware-based systems, *SmoothTalker* is a steal for only $150.

When I first got a copy of *Smooth Talker* I was skeptical. I was accustomed to using external "black boxes" to generate speech, products like Votrax's Type 'n Talk or Street Electronics' Echo speech synthesizer. I had used these products to create a voice-driven interactive fiction game for the blind. I didn't think a disk-only product could really reproduce the many subtleties of human speech — at least not with any degree of quality. So, I popped the *SmoothTalker* disk in my Mac, booted the program, and typed "h-e-l-l-o." In a matter of seconds, a mechanical-sounding "hello" filtered through the speaker. For the rest of the evening, whenever I tapped on the keyboard, the Mac obediently mimicked my words — the Gettysburg address, a few snippets of Shakespeare, even "Now is the time for all good Macs to come to the aid of their country." Of course, I found it hard to resist typing in a few four-letter words. Everything sounded pretty good.

> The first text-to-speech voice synthesizer program for your Macintosh.

Further experimentation led me to the discovery that there was an amazing amount of flexibility written into the program. I could speed up or slow down all or selected portions of the playback, and *SmoothTalker* would automatically add emphasis and inflection to words. For example, the pitch of the voice would go down a bit at the end of sentences that ended with a period; up for sentences that ended with a question mark ("see." sounds very different from "see?"). The rules *SmoothTalker* uses to control inflection (called an algorithm in computer parlance) aren't foolproof, but at least when my words didn't sound right, I was given a chance to change the inflection on individual words, or even on small parts of words. Though the text-to-speech algorithm used by First Byte is fairly sophisticated as well, it too is susceptible to minor glitches. And no wonder: There are so many variants and broken rules in the English language, that no computer or software package — no matter what it costs — could be expected to properly pronounce every word.

Here are two "tricks" that coax *SmoothTalker* into pronouncing words correctly: You can misspell words like "cloze" for clothes or "dayta" for data; and you can turn off the program's text-to-speech system and enter basic sounds. (This lets you directly control the Mac's sound system.) I found that when one trick didn't work, the other one did.

Well, after playing with *SmoothTalker* for awhile, I thought I found the Eighth Wonder of the World, so I called a good friend of mine and asked him to hear my latest discovery. When he arrived I played back the passage of *SmoothTalker* text I had written. His eyes squinted and his ears strained to hear what was being said. "What was that word — gun or gub?" he asked. "And that one. . .and what was that one?"

That's when I realized that, during my full evening of experimenting with *SmoothTalker*, I got used to the Mac's accent — a sound that many describe as part-Norwegian and part-Southern Cali-

By GORDON McCOMB

fornian. Those same words that seemed perfectly natural to me sounded like a drunken E.T. to my friend. And, as I later learned, my phone-answering tape got a similar response. In fact, on more than one occasion the caller suggested that I have the machine serviced.

Bad news for yapping with your Mac? Probably not. As it turns out, the output from all but the most expensive voice synthesis products for computers are difficult to understand at first. Basically, once you get accustomed to the weird accent, you'll understand each word perfectly.

The bad news is that *SmoothTalker* is a stand-alone program, and can't be used concurrently with any other programs. For example, one creative use of voice synthesis is hearing the computational results of a program like Microsoft's *Multiplan* or Lotus' *Jazz*. If you work with a lot of numbers, using a voice synthesizer for audible feedback can be real boon.

Fortunately, Apple may have already come up with a solution. Packaged with its May edition of the Software Supplement (a disk full of goodies shipped to Macintosh developers all over the world) is a handy utility program called *Macintalk*, which sounds about as good (and bad) as *SmoothTalker*. *Macintalk* is designed to be integrated into other applications — from games to electronic spreadsheets to word processors. Text displayed on the screen, even inside a dialog or alert box, is instantly played back through the Mac.

If you're at all familiar with the inner workings of the Macintosh, you've probably heard of the "Toolbox," a set of mini-programs encased in the Mac's read-only memory (ROM) chips. For instance, the Toolbox routines enable you to edit text when using the notepad desk accessory or create circles and squares with *MacDraw* or *MacPaint*. *Macintalk* works a lot like the Toolbox, but instead of being permanently stored inside the Mac's ROM, it's loaded into random-access memory (RAM) along with the rest of the program you're using.

One of the most alluring applications of this type of speech synthesis — where you can hear what's displayed on the screen — is in the area of text-adventure games. Though the Macintosh voice doesn't sound like a BBC announcer, I can tell you that *Hitchhiker's Guide to the Galaxy* plays better with voice than without it. Programmers can also use *Macintalk* to create sound effects, like those in Silicon Beach Software's *Airborne!* (which, to be truthful, uses real-world digitized sounds, not ones synthesized from scratch). But there's a catch here: Since *Macintalk* really isn't an add-on product, software must be designed to use it from the start.

Just imagine Mac adventure games complete with screams, gunshots, moans, blasting spaceships, etc. There's absolutely no reason why the Mac can't have its own super-sophisticated, sound-picture game like those created for other computers. The game may only be in black and white, but the clarity of the Mac's screen is hard to beat.

Gaming aside, some practical applications of this type of voice synthesis could be in aiding the physically handicapped, teaching and training, banking, computerizing phone information services (electronic shopping, classified ads, etc.), manufacturing, and accounting.

Fully synthesized speech is one approach; digitized speech — the stuff created by real humans and recorded in digital form onto a disk — is another. Silicon Beach Software will soon be offering a fun-filled hacker's disk that allows you to cut and paste together different pre-digitized sound and speech segments. Included in the package is *WaveEdit* (used in developing *Airborne!*) which lets you tinker with an assortment of sounds and words, create your own computerized sound albums, and learn the fundamentals of sound processing (you can actually see the waveform of the sound on the Mac's screen).

While I'm on the subject of voice synthesis, I should point out that stand-alone synthesizers also work with the Mac. These cost more than *SmoothTalker*, but they sound better. For example, by connecting Votrax's Type 'n Talk to the Mac's printer port and setting the unit to 9600 baud speed, everything sent through the printer interface is relayed through Type 'n Talk. This can be useful (beyond raw tinkering, of course) if the program you're using has a "printer echo" capability, where text displayed on the screen is relayed to the printer. As luck would have it, most of the Infocom interactive fiction games for the Mac have just this feature. ce

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LET'S GET ALL OF AMERICA WORKING AGAIN.

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Sports games continue to be the favorite mode of play in my local arcade. When *Punch Out* (Nintendo) finally waned in popularity, *Karate Champ* (Data East) picked up the slack. Though quarters still line the panel of *KC*, these new martial arts contests are bound to steal some its glory. None are as complicated to play as *Karate Champ*, but two of the three (*Yie Ar Kung Fu* and *Kung Fu Master*) offer new challenges for the karate player.

Karate Champ is not necessarily fun to play. By combining confusing commands with a staggering number of options — there are 25 different maneuvers — *KC* can be the great leveler — sometimes even the great discourager. Deciphering the strange karate terms listed in the attack menu (printed on the control panel) and mastering the joystick sequences (a high punch, for example, is executed by moving the left stick to the left while pushing the right stick up) are formidable challenges at first. Add to this the lag time between command and action and you'll find yourself running away from your opponents — dishonorable though it may be — until you really get the hang of the game. It took me quite awhile to figure *Karate Champ* out.

Karate Champ is responsible for the latest trend to hit the arcades: kung fu-mania.

YIE AR KUNG FU

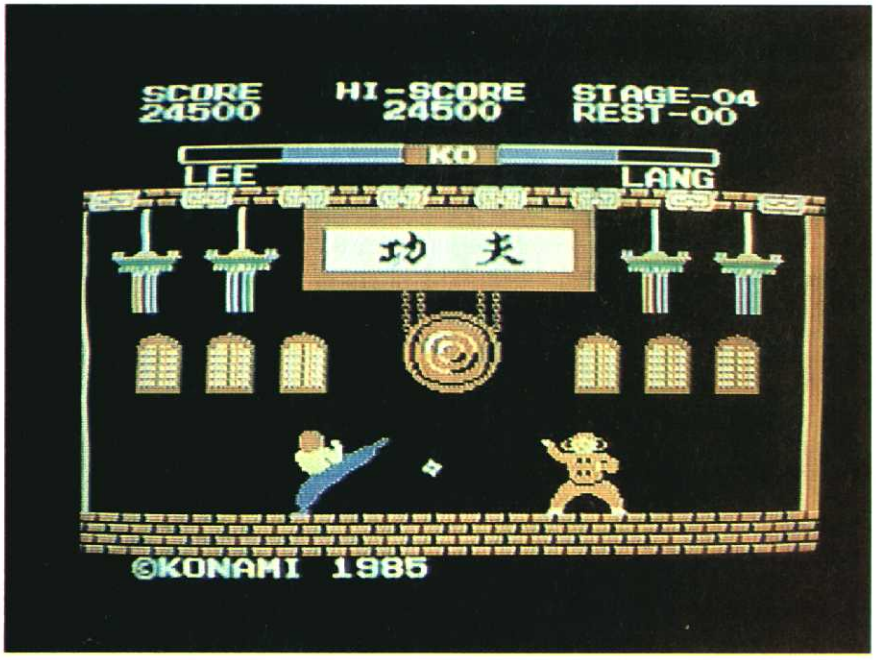
Konami

Konami takes a simpler approach with *Yie Ar Kung Fu*, a game that's not nearly as perplexing as its name. More for beginners, *YAKF* doesn't sacrifice sophistication and authenticity — even though your character, the master Oolong, happens to look more like Larry Hagman than Bruce Lee.

The object of the game is to defeat five warriors, each of whom has unique abilities and different weapons. Your first foe is Buchu, a wizard who sails across the screen as if propelled by a flying carpet. Then there's Star, a woman warrior who tosses deadly stars, or shurikens; Nuncha (he uses a weapon called nunchucks), Pole and Feedle. On the fifth level (versus Feedle), you also have to battle several unarmed warriors at once.

You only have one life to live in *Yie*; get knocked out and it's game-over. Fortunately, advancing two or three rounds the first time out can be done, thanks in part to the many cheap shots that are allowed — kicking your opponent's foot, for example, carries as much weight here as does a solid punch to the chin. It's fun to play the chicken and still win.

Yie Ar Kung Fu has joystick controls as well as separate punch and kick buttons. By moving the stick, you can access up to sixteen different attack maneuvers and also make Peter Pan-like leaps in order to escape. The response time between commands and action is good. This characteristic, plus the background graphics that look like scenes from those schlocky kung-fu movies, make this karate clone a winner.



YIE AR KUNG FU (KONAMI)

KUNG FU MASTER

Data East

"Deliberate" is the best way to describe Data East's second karate entry, *Kung Fu Master*. Not only does it steal (deliberately, I presume) from *Donkey Kong*, but it plays in a deliberate and straightforward fashion. The shortage of kicks and punches (three of each) to pick from may seem limiting, but this modest arsenal works surprisingly well. Of all the karate games I've sampled, *Kung-Fu Master* is the most satisfyingly paced.

The game's storyline — a not-so-clever homage to *Kong* — casts you as Thomas, loved one of Sylvia, who's also pretty good with her hands and feet. You and Sylvia are attacked and, though you clobber a dozen assailants, a small group kidnaps Sylvia. A ransom note follows. Your mission: Save Sylvia by patroling five floors of a veritable Temple of Doom and inevitably squaring off with a nearly endless stream of thugs and brutes.

At first, with the opposition sparse, simple punches easily do the trick. Later, however, when the attackers come in waves, you'll have to be more creative. Since recovery time is quick, a flying kick can be followed closely by any one of the five remaining moves. As in all climbing and jumping games, timing and accurate judgement of distances are keys to advancing beyond the initial level.

While some may criticize *Kung Fu Master*'s small repertoire of moves, this is, in my opinion, one of the game's best touches. With little or no practice, you'll

KUNG FU MASTER (DATA EAST)

CHINESE HERO (KITCORP)

be kicking and punching immediately, leaving more time for addressing the game's many pitfalls. Like *YAKF Kung Fu Master* is a solid choice for a novice karate player.

One hint: If you're caught by one, two, or even three of the Temple's warriors, wiggle the joystick back and forth; doing this breaks their hold on you. I've seen many players neglect to use this technique despite Data East's mention of it right on the control panel.

CHINESE HERO

Kitcorp

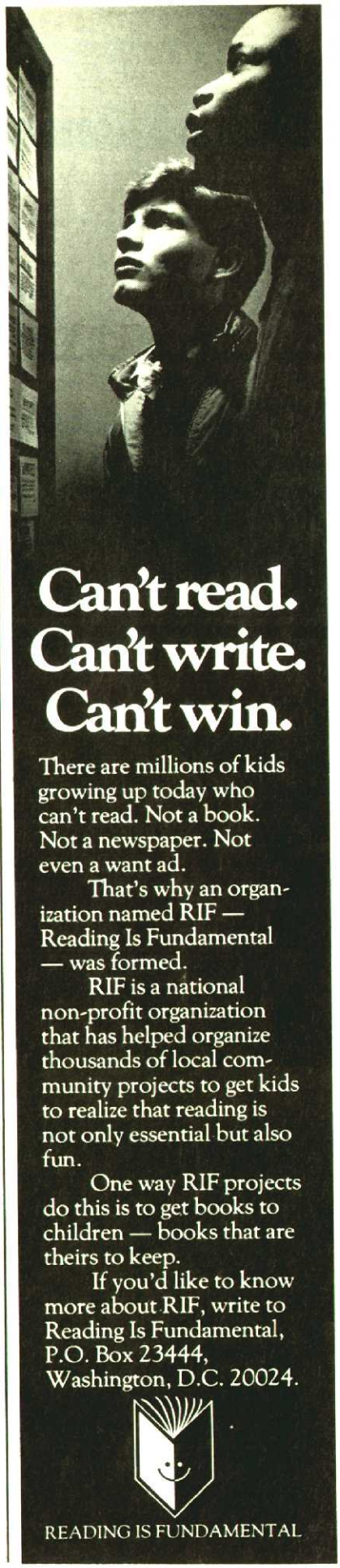
Kitcorp's *Chinese Hero* is, by far, the worst of the bunch. Its lukewarm rehash of tired game concepts is about as appealing as day-old cereal. There's a little of *Pac-Man* in here, and some *Donkey Kong* too. What little *Chinese Hero* has to offer is token at best and muddled beyond recognition.

The plot and the object of the game are anyone's guess (Kitcorp fails to explain either). One thing I'm sure of: You are the "Chinese Hero," and your first concern is the disposal of different groups of similarly-colored warriors. The battleground, an ornate garden, is initially covered with bad guys, all stumbling around like stoned rock-and-rollers at a Van Halen concert. You can attack in three different ways: punching, kicking (I like the showy, but useless, tumble kick) or, when things get rough, resorting to the power ball — an energizer-like device that sends the opposition running for cover. Eventually, you'll go head-to-head with the heavy — an ape that spits out fireballs.

Perhaps I'm missing the humor behind all of this. Granted, on a visual level *Chinese Hero* is cute, maybe too cute for the serious karate player. There's a certain silliness to the game, which I suspect is intentional. But, compared to the others, it's an also-ran, basically because of the game's lame pacing and ludicrous premise.

I'll be the first to admit my reservations about any game that attempts to duplicate real-life activities, but I must say that three of the four karate games I've played have shown surprisingly redeeming value. They're cheaper than a set of nunchucks, for one. A lot easier on the knuckles, too.

A few tips: Catching five E-balls earns you an additional "Hero"; Wuneye can be had by kicking him in the back. ce



Q&A

And the answer is. . .

By WILLIAM MICHAEL BROWN

Q: *I've heard that the only difference between Atari's current 800XL and the forthcoming 65XE is that the 65XE can also use 3½-inch diskettes. Is this true? If so, are 3½-inch disks eventually going to replace 5¼-inch disks? If the answer is "yes," why?*

(Tom Lang, Somerville, MA)

A: Well, yes and no, Tom. Atari actually announced four new XE computers back in January: the 65XE, the 65XEM, the 65XEP, and the 130XE. All of them are essentially repackaged 800XLs, but with various features added on to three of them. The 65XEM, for instance, comes with a special built-in eight-voice synthesizer for music fans, and the 130XE has twice (128K) the RAM of a normal 800XL. It's the XEP I think you've heard about; the "P" stands for "portable," and along with the carrying strap and built-in monitor you'd expect in a portable, it also has a built-in 3½-inch disk drive. (I can't tell you for sure that the XEP *has* a 3½-inch drive — only that Atari *says* it will.) A 3½-inch drive is the logical choice for a portable; the drive unit itself is smaller and lighter, and the disks are much more durable than 5¼-inch disks. The smaller disks come encased in a hard plastic shell with a sliding metal door that covers the recording surface when the disk is not in use; while it still isn't a good idea to spill coffee on any floppy or use it as a bookmark, I once played a hard game of indoor Frisbee with a 3½-inch DOS disk, and never had a problem with that disk thereafter. Another advantage of the 3½-inch floppy is they usually hold more data — around 500K, as opposed to the normal 5¼-inch range of around 100 to 360K. Whether or not they'll ever really "replace" 5¼-inch disks is anybody's guess. The old 8-inch disks could hold a lot more data than 5¼-inch disks, but were supplanted largely because the 8-inch drives were expensive and cumbersome, and the disks even more delicate than the 5¼-inch disks. Yet 8-inch drives and disks are still around, and I even know a couple of people (writers and businessmen, with big data storage needs) who swear by them. Although 3½-inch disks have it all over 5¼-inch floppies in the three important areas mentioned, I don't think you have to worry about your 5¼-inch drives and disks becoming obsolete. Programs will probably just be released in both formats.

Q: *In* Zork I, *how the heck do you get past the lake? I've tried every possible way and cannot find the answer.*

(Richard Pilawski, Dover, NJ)

A: Well, it's not really a "lake," is it? It's actually a reservoir, and like any reservoir, it has a dam that keeps it full. I'd suggest you start fooling around a little in the Maintenance and Dam rooms; you might discover something very interesting the next time you visit the reservoir area — that is, if you hit the right button (and if you don't, be sure you know how to swim).

Q: *I know you must be getting tired of questions about* Ultima III, *but I am really stuck. I've been playing for about six months now, all my characters are at top strength, I have all the cards, three of the marks, and the exotics — but I can't find the Mark of the Snake. Could you please at least tell me which dungeon it's in? I've been looking for it for the past two months, with no success.*

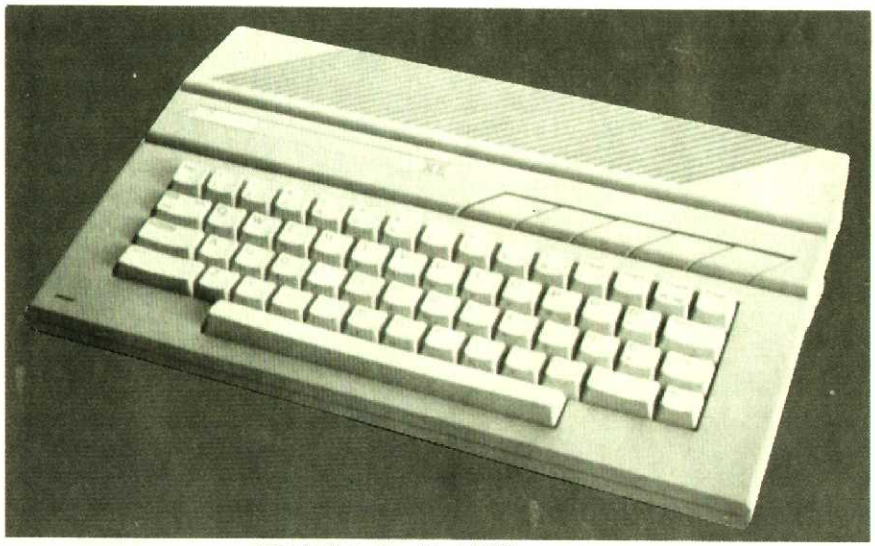
(Clay Embry, Kansas City, MO)

A: Try the bottom of the dungeon on the island (level 8 — they all have eight levels). I love *Ultima*, but sometimes I wonder if people are as stuck as they say when they write in. Maybe a more, shall we say, cavalier attitude is in order when things really get tough.

Q: *I am writing to you about the* Ultima III. *When I pray in a certain place, I'm told to yell "Evocare." I have all four marks and four cards, but nothing happens. Another interesting thing: On my computer, the "yell" command does the same thing as the "other" command; for example, yelling "bribe" does the same thing as othering "bribe." Weird! Is there something wrong with my disk? Anyway, I decided I couldn't wait to finish the game, so I "removed" a key set of mountains using my disk editor. Sorry, Lord British.*

(Jeff Naiman, Woodbridge, CT)

A: You're a man of action, Jeff, and that's no lie — though I can't really condone editing a disk as the way out of a problem (although I'll admit it's more creative than buying a hint book). On the disk "glitch": there are a number of anomalies and strangenesses in the third *Ultima*, not all of them solvable, and not all of them really a problem, as yours seems not to be. Whether this one is unique to your disk or not, I wouldn't know, and since you've already "edited" yours, it might be hard to tell now. But if you or anyone else reading this has a problem with the game, you might want



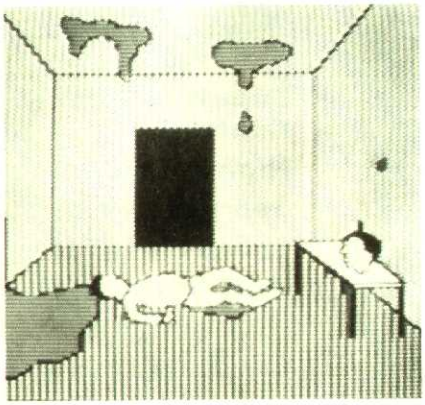
The forthcoming Atari 65XE computer

to go straight to the source: Origin Systems maintains an *Ultima* help line (713-333-2539). Who knows — you might even get to talk to Lord B. himself.

Q: *I own an Apple IIc, and I have a question about Sir-Tech's* Crypt of Medea. *I play the game constantly, and I'm stumped on one small problem: I can't find any earplugs. Would you be so kind as to tell me how to get them?*

(Curtis Kretz, Lancaster, NY)

A: Wipe the blood and gook from your sneaks and head on down to the dead



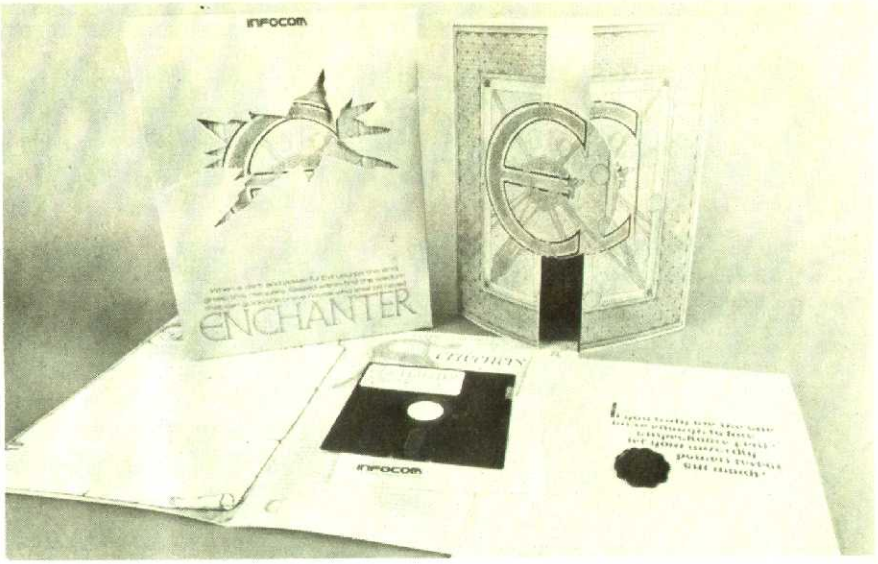
CRYPT OF MEDEA (SIR TECH)

end. You'll probably have to build a little something out of wood to actually get there; once there, have a look around. I know this probably doesn't make much sense, but then crypt-crawling never made much sense either.

Q: *I've been looking around for a book that would introduce me to machine language programming for the Apple IIe, but every book I find assumes that I've already had experience with machine language, which I don't. Can you recommend any books for me?*

(Sean Duross, Kalamazoo, MI)

A: Since you don't say exactly how much experience you have with any kind of programming, or with computers in general, that's kind of a hard question to answer. I remember my biggest problem with learning machine language was understanding basic facts about the workings of microprocessors, and being confused by books that taught assembly language as though it were machine language, when the two are really rather distinct animals. If that's your problem, too, then I'd recommend the books I started with: *Don Lancaster's Micro Cookbook*, Vols. 1 and 2. The first book starts you off with everything you need to know about how microprocessors work, so that you have a real groundwork for understanding machine language, which is very thoroughly covered



ENCHANTER (INFOCOM)

in Volume 2. Although the concepts taught in both books are applicable to a wide range of micros, I think you'll find the Apple uniquely suited for use with them. They're intended to be used for self-instruction, too, and while they are *extremely* thorough (some readers might feel they're even too thorough), a serious study of both of them practically guarantees that you'll be able to hold your own in any discussion about machine language. The books were written by a widely-respected micro pioneer who knows what he's talking about and manages to add a great deal of humor to a rather dry subject. They're $15.95 each from Howard W. Sams & Co., 4300 West Indianapolis, IN 46268. If you can't find them locally, try writing to Sams or to Lancaster's own software company, Synergetics, at Box 809A+, Thatcher, AZ 85552. If the *Cookbooks* seem a bit much, I'd suggest the old standby, *Machine Language for Beginners*, by Richard Mansfield, from Compute Books.

Q: *I have* Planetfall *for my Atari 800XL. I love the concept and the witty wording of the game. But I'm having some trouble with a few of the puzzles. First, I found the mural in the ProjCon office and I have no ideas what to do. Next, I have gotten into the radiation lab, but I can't find the radiation suit anywhere. I hope you can shed some light on these two subjects.*

(Bill Winseck, Canonburg, PA
John Schulz, Stockton, CA)

A: Don't worry about the mural; it will take care of itself eventually. But the radiation lab is a total squirrel cage; I, too, spent weeks searching for it, and believe me when I tell you, you don't need it to win the game.

Q: *I just recently purchased Infocom's* Enchanter *and learned that you can "summon" an adventurer from* Zork II. *Great — only he won't obey me. What's the use of this bozo?*

(Jeff Bilger, Arlington, TX)

A: Now, be nice to the old adventurer, Jeff; if you'd been through *Zork II*, you'd be a little zap-happy too. Although he *is* kinda dopey and cheese-brained, he can also be a very useful doorman at times, if you're very friendly and coax him along a lot, and also happen to have the Right Stuff, as it were. Actually, he's just happy to have a job; there's no Social Security for superannuated adventurers, you know, and he'll be pleased to fetch and carry for you as long as it looks like there might be a tip in it for him. Keep on Gnustoin' on.

Q: *A few weeks ago, I bought* Deadline *for my Atari. When you're in the upstairs closet and knock on the walls, the game says, "The north wall here sounds unusually hollow." Is there a secret passage behind the wall? If there is, how do you get to it? I know what you're going to say: "Why not buy a hint book?" Well, I don't want to spend $7.95 to find out the answer to just one question. So how about it?*

(Andy Swenson, Whitehall, WI)

A: Andy, have you ever considered a career in banking? Anyway. . .give a good, hard look at the bookshelf in the library, if you haven't already. You also might try giving dear old George a little of the third degree right after the will-reading, and then shadowing him (very carefully) as he heads upstairs. He won't be listening to very many weird records this afternoon. . . . ce

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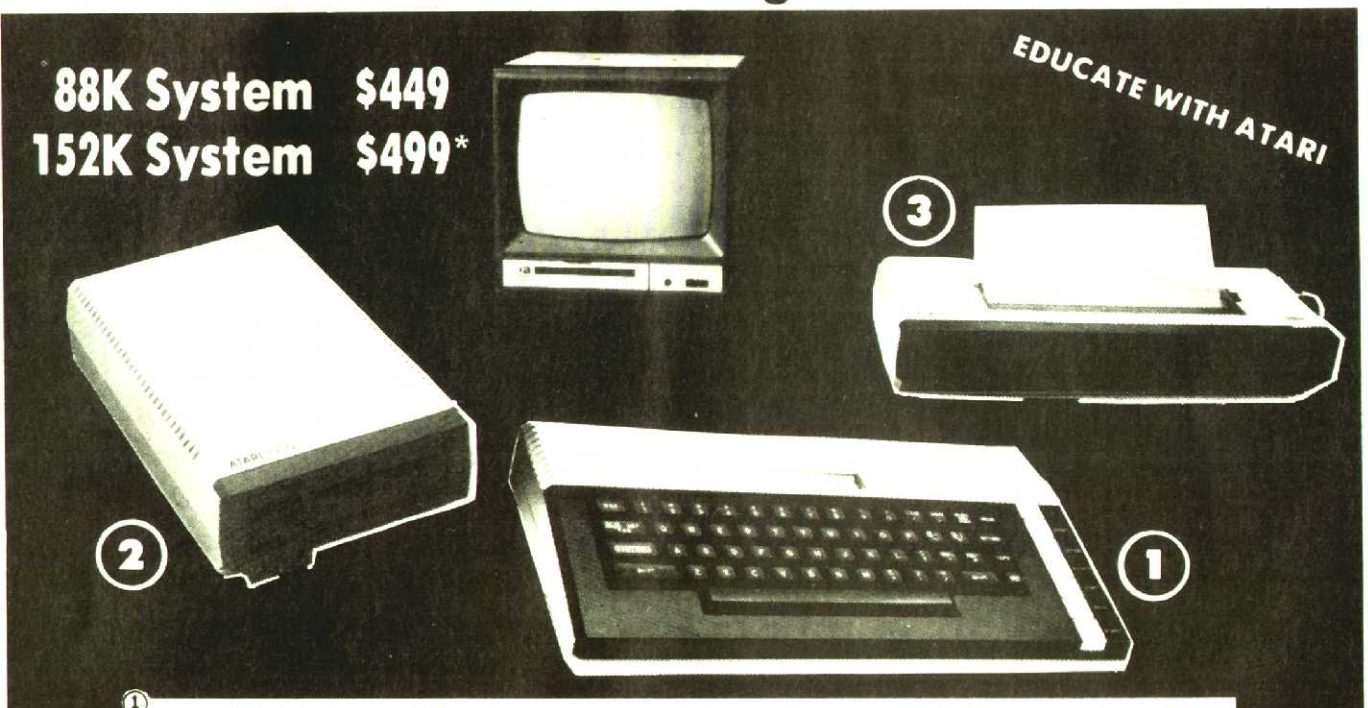

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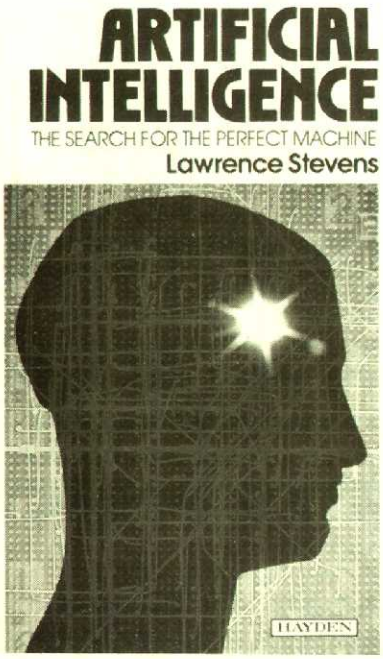
Book Reviews for the Computer Literate

ARTIFICIAL INTELLIGENCE

By Lawrence Stevens
Hayden, 1985, $14.95

What *is* artificial intelligence? It's easy enough to understand "artificial" as meaning not natural, but what's "intelligence"? An abacus (or, for that matter, a calculator) is certainly artificial, and it performs an intelligent computation, but it is not AI — it's merely a counting device. But isn't a computer — even the largest, most sophisticated computer — essentially a very complex, extraordinarily fast, counting device? Since all any computer can do is distinguish between one and zero (when its circuits are on and off, respectively), it's tempting to say that no machine is ever intelligent in any real sense.

The implicit assumption of this view is that human thought-processes involve something more complex than binary discrimination. But this may not be the case; we really don't know how we think. So we can't call a thought intelligent by virtue of *how* it was derived (without admitting the possibility that humans lack intelligence); we must consider only *what* was thought. This is the basis of the Turing Test, which was developed by the seminal AI theorist Alan Turing, to answer just this question.



The Turing Test, as described in *Artificial Intelligence*, a new book from Hayden Publishing, is this: "If a human can question a computer, receive answers (through an intermediary), and not be able to determine if he or she is communicating with a human or with a machine, then the machine can be said to have intelligence." This clear, brief explanation of a significant idea in AI is typical of the book, which is intended for readers without prior knowledge of the field or computer-sophistication. If it avoids the more problematic (and, for some, interesting) elements of AI, it does so by design.

Author Stevens will familiarize you with the much talked-about and little understood field of Artificial Intelligence. With 18 chapters, the book covers everything from philosophical foundations to such sci-fi applications as the Japanese Fifth-Generation project, which, if successful, will be the harbinger of the robotic age. But there are only 150 pages, so each topic is presented in the shortest way. If you are really interested in anything you discover in *Artificial Intelligence*, you'll have to look elsewhere to learn enough about it.

Artificial Intelligence is like a guided tour of Europe—15 countries in 20 days, but you have to stay on the bus. This approach has its advantages, primarily that on your return you can drop so many names. And this is just what some people will want: AI is being discussed by so many people, at so superficial a level, that being able to bandy the right terms about is a victory in itself.

For those who want more than superficial knowledge, though, I am hesitant to recommend this book. There are so many simplifications here that it's hard to tell if the author really knows the depths of his material himself. He shows a blithe attitude towards everything complex, either stating unsolved problems and leaving them without development, or waving his hands at possible solutions.

AI is a difficult subject, and the best way to understand it — a thorough course in advanced logic and computability — is more than most people want to attempt. *Artificial Intelligence* is a well-written, relatively easy introduction to the field, and I can recommend it, with some reservation, to a general audience.

(Dan Goldberg)

A ROBOT IN EVERY HOME

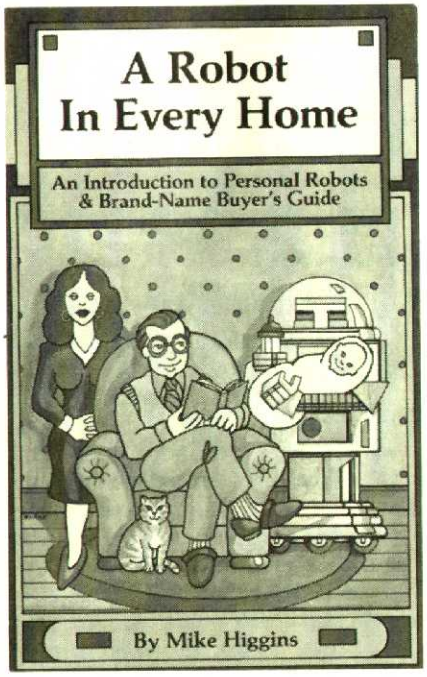
By Mike Higgins
Kensington Publishing Co. $14.95

A Robot in Every Home is a fine primer of current robotics technology, its limitations, and the future outlook, but Higgins' pedantic style makes an exciting topic into a dry expository composition. While there's no doubt about Mike Higgins' expertise, he doesn't seem quite sure whether he's writing a pop culture book, an elementary text, a technical manual, or a *Consumer Reports*-style evaluation. His unfortunate solution is to repeat a lot of information in each of these contexts.

You might as well skip the first two general chapters. They reminded me of watered-down history texts from junior high school. He gives a few brief historical sketches of early automations that might be considered robotic — like the water-weighted doors of a temple in Alexandria, designed by Hero in 100 A.D.. But he documents these events without adding any flavor or color to the accounts. Higgins writes like a disciplinarian teacher who presumes his students to be dolts and wants them only to memorize dates.

The book does cover technological limitations and current possibilities in a thorough, if slightly disjointed, manner. If you want a robot who vacuums or does the dishes, Higgins cautions that the software for such developments may be years in the making. Accurate vision systems, he says, are the primary development needed to overcome many limitations. The robot as security guard — while currently feasible — will be much more effective once video image scanning time is cut down. The most practical application Higgins sees in the first generation of commercial home robots is in lifting and carrying objects — a function that should appeal to the elderly and handicapped (not to mention the lazy).

Higgins is at his best when he talks of the most advanced function of robots to date — entertainment, or the robot as a mechanical friend. Besides animated toys like the Tomy Dingbot, which moves around idiotically bumping into things, Higgins covers robots with a complete CP/M computer, keyboard,



monitor, and disk drive built in — Hubotics' Hubot, for example.

A robot may be the ideal companion for the obnoxious. And Higgins shows how a personality can be programmed into yours. You may want your robot to be the curious type — one who explores your house, announcing his presence when you enter the room (sort of like Floyd in *Planetfall*). Or maybe you want a more depressed version who sits in the corner morosely reciting existential verse (something along the line of Marvin in *Hitchhiker's Guide to the Galaxy*).

The brand-name buyer's guide to commercially available robots is the most useful section of the book. Higgins, while not overly critical or analytic, does provide the facts — from size and price tag to functions and available software. One item he could have added, which perhaps might have generated some ideas for these manufacturers, is his own fanasty robot. A comparison table is included that contrasts robots according to price, options, software availability, voice synthesis, and arm control. Addresses of robot manufacturers are listed at the end.

A Robot in Every Home, like Herbert Hoover's "chicken in every pot," is a fine idea, but it doesn't have enough substance to win my vote.

(Ben Templin)

THE GUIDEBOOK FOR WINNING ADVENTURERS

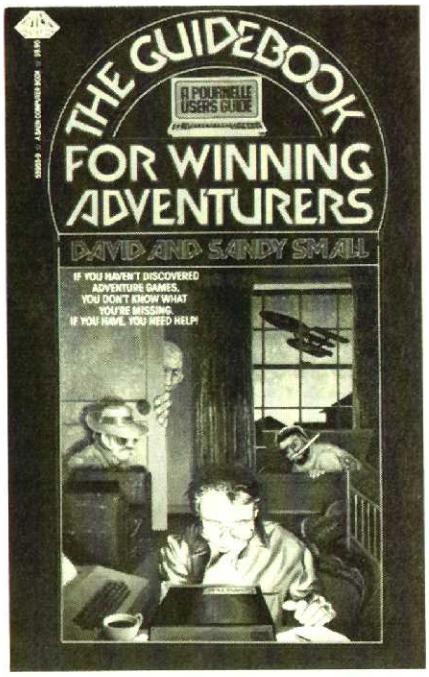
By David and Sandy Small
Baen Enterprises, 1985/$9.95

Well, here we go again. For anyone who hasn't yet bought any of the excellent Infocom Invisiclues hint booklets or any of the multitude of recently released adventure-game clue manuals, Baen Books has a new offering. *The Guidebook For Winning Adventurers* (quite a mouthful, isn't it?) would be more accurately titled *The Guidebook to Winning Six Popular Infocom Adventures*, since it is little more than six separate hint booklets loosely strung together under the theme of solving adventure games.

The adventures that are discussed are six of the best — the *Zork* series, *Planetfall*, *Enchanter* and *Infidel* — but that doesn't stop the book from being an unpleasant and hypocritical exercise in frustration. Though the authors' solutions are correct, they are presented in such a way as to exasperate the reader; it is often simpler to solve a game puzzle on your own than it is to decipher the solution that the Smalls give, and it is without exception more enjoyable.

The Guidebook is bad from the first page on. The authors persisted in filling the first five chapters with superfluous information presented in an unnecessarily grandiose manner. Readers just want some help in getting past the Guarded Door in *Enchanter*, not a treatise on the psychology of role-playing or tips on where to hide the book to avoid using it

> The best kind of maps are barely legible, scrawled on the back of candy wrapper with a dull pencil.



too often. If you just can't survive the rigors of *Infidel*'s desert, you won't want to wallow through five chapters of such pseudo-philosophical meanderings as "What is reality anyway?".

The first chapter is titled "How to Use This Book," and it contains the same information that most authors are able to cover in one page — the usual admonitions and warnings against reading too much and spoiling the game. The next four chapters are also typical one-pagers, explaining such things as how to make a map: ". . .go pick up some graph paper (8 divisions per inch seems to work the best), sharpen up a few pencils or pens of different colors, and have some scotch tape handy." This "hint" is not only silly, but misleading as well. In my experience, the best way to make an adventure game dull is to stop at every location to measure out boxes on a map and to label each room with its contents. The best kind of maps seem to be those that are barely legible, scrawled on the back of a candy wrapper with an unsharpened pencil; these maps may not be as accurate as those that are carefully drawn and cataloged, but they add to the enjoyment and mystery of the adventure.

As for the clues which make up the body of the text, one is tempted to liken them to using radiation treatment to cure

the flu. There is no question that Infocom's puzzles can be frustratingly difficult at times, but even at their worst they remain humorous and tantalizingly exciting. *The Guidebook*'s clues, on the other hand, are overbearing, tiresome and difficult to use. Sometimes, in fact, they are inaccurate, albeit never seriously so.

To start with, the authors tried to copy the Invisiclues style by printing the hints in a question-and-answer format. However, rather than using Infocom's invisible-ink technique to keep readers from seeing the answers to questions they want to solve on their own, the *Guidebook* puts all of the answers in a cipher.

This would be fine if the answers were only a few words long. But they aren't. Instead, they're lengthy, and irritatingly roundabout. What comes across as a good sense of humor from Infocom is merely an annoyance when each word has to be painstakingly decoded. And what's more, the lengthy answers are unnecessary; to the *Enchanter* question "What should I do when I get hungry or thirsty?" the book gives eight lines of gibberish starting, "VTVBMMZ JU JT B HPPE JEFB UP FBU PS ESJOL TPNFUIJOH." All it had to say was "eat or drink."

Perhaps strangest of all is that after taking all of these precautions against giving away too much information, *The Guidebook* follows each clue section with a list of objects, where they are found and what they are used for, as well as a complete transcript of the steps required to solve the game, both written in plain English. Even a small glance at these sections is highly revealing because of the amount of information they contain, so, in the end, the careful encoding of the clues and the many warnings against reading too much are ineffective.

To top it all off, the so-called "Order of Play" sections give the impression that Infocom adventures are entirely linear and that they must be solved in a certain order. This is simply untrue (I have solved all of the games in question, and in each case I did so in a different order from the one they suggest), and it is doing a tremendous disservice to Infocom to imply that there is only one correct way to solve their games.

The mark of a good hint booklet is that it's helpful in solving an adventure without giving away more information than the player needs at a certain moment, comprehensible enough to be simple to use, and enjoyable enough to read even after the adventure is finished. *The Guidebook For Winning Adventurers* is none of these things. The Invisiclues line of hint booklets, on the other hand, is all of the above, and any one of them is a much better buy than this.

(Charles Ardai)

Random Bits

DICTIONARY OF COMPUTER GRAPHICS

By John Vince
Knowledge Industry, 1984/$34.95

Examining the vocabulary behind computer graphic techniques, the dictionary defines 200 buzz words, procedures and principles — complete with diagrams and a four-color insert. It leaves out some words that are widely used in computer graphics but also applicable to traditional art. For example, cibachrome prints, which are produced from a slide, are the most widely used process of producing computer screen art. Also, some of the newest technology, like scanamurals, is not mentioned. The book is, otherwise, thorough in defining terms specific to computer graphics, but the average computer user who needs a good reference tool would do well, especially at these prices, just to get a general computer dictionary.

THROUGH THE MICROMAZE: A VISUAL GUIDE TO GETTING ORGANIZED

By Wayne Creekmore and Stephanie Behasa
Ashton-Tate, 1984/$9.95

A decidely low-tech introduction to computers for the truly incompetent, *Through the MicroMaze* presents instructions for organizing everything from your wires to disk directories. The attractive graphics and straightforward writing skips over in-depth technical questions like "Why does it work?". Instead, the book gives the reader an idea of how to operate an organized system. However, most of the information is common sense or should be available in the user's manual of your computer.

1985 PROGRAMMER'S MARKET

Edited by Brad Lutz
Writer's Digest Books, 1984/$16.95

From the people who bring out the perennial *Writer's Market*, comes a hacker's version for selling freelance programming. Listing companies, software requirements, payment schedules, and examples of current software, *PM*'s scope is ambitious. Some notable companies are missing — Hayden, Grolier, and Melodian among them. *PM* includes some good advice on presenting your work to potential publishers. Sample query letters, contracts, and profiles of designers make for a thorough guide to selling your software. *PM* is set up in alphabetical order according to company, and indexed for type of software and computer system.

EASY INTERFACING PROJECTS FOR THE COMMODORE 64

By James Downey, Ron Rindsberg, and William Isherwood
Prentice-Hall, 1985/$10.95

If you're serious about upgrading your C-64 but lack the technical knowledge, this handy project book will take you step-by-step through setting up speech synthesis, programming EPROMS, and several other useful hardware configurations. Perhaps the most helpful sections concern analog-to-digital conversion. Do you have some program tapes but want to use your own cassette recorder instead of buying the Commodore version? Got a soldering iron? With that and some electronic parts available at most hobby stores, you should be able to fool the C-64 into thinking it's connected to its own recorder. Other projects include interfacing a parallel printer, adding mechanical toys through the user port, and using the game port for optical sensors. ce

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ROGUE SCHOLAR

Continued from page 39

characters from the computer keyboard — bars and hyphens represent walls, number and percent signs are passageways and stairways, plus signs are entrances, and carets are traps. The protagonist is the Rogue, represented by the "G" symbol. The Rogue makes it down the various levels of the Dungeon, seeking the Amulet of Yendor, which is usually at least 25 levels below. On the way down, he battles various creatures, each of which is common only to a specific subset or subrange of levels. As you battle the creatures, you pick up experience points and become more durable. You pick up treasure, potions, scrolls, and weaponry. You try to get the amulet and go back up top. Most people don't even get to the amulet, and are killed by the Umber Hulk or the Troll.

The thing about *Rog-O-Matic* is that it consistently figures out the angles at number-crunching speed. Watching it play out its hand is mind-boggling. The research world is interested in it as pure science because its principles have furthered the study of expert systems, which are important to the development of future generations of computers. Ultimately, this game will be instrumental in creating machines that act like humans. "In *Rogue*," says Mauldin, "you have something that the computer had never done before. It was a game that was real complicated. You have a world simulation going on, you have other actors whose intentions you can't be sure of, things that happen randomly, terrain you haven't seen before.

"I spent about three years of my life making computers smarter by playing this game," he adds with a twinkle.

One of Mauldin's advisers is Hans Berliner, an elder stateman of game-playing at the university with the title of "senior research computer scientist." Berliner came to the university at the age of 40, as a grad student. He'd already been a world chess champion in correspondence chess by then, and had created a chess program in his spare time while he was working for IBM.

Berliner is best known for his *BKG* program, which plays backgammon, and for his work with High-Tech, a dedicated chess computer in the basement of Wean Hall. It is a special-purpose machine that will cogitate at least a hundred thousand positions a second. It is based on VLSI technology, in which each one of 64 chips monitors a chessboard square, figuring out any legal move that can be made on or near that square. These chips constantly relay information to a central monitor which directs action.

"Each chip is not only able to tell the moves that it makes, but it also knows something about the other chips and how safe it is. This produces a six-bit priority number and the chip which has the highest priority move is the one that makes the next move. The master monitor took us three years to figure out," says Berliner.

Berliner leans against a wall which displays a poster of Einstein. The Einstein quote seems rather *a propos* for this *magister ludi*: "Imagination is more important than knowledge," it reads. The advancement of human knowledge is based on allowing people like Berliner to just play. "Research really is digging around trying to find new things," he says. "Most people who do things in universities have to teach and do all sorts of other stuff and the amount of time you have to do research is fairly small.

"It's not that way here. We're considered good enough and we get contracts to do what we do. We're careful; we have enough discretion about how we spend our money internally so that somebody like me can spend his time pursuing things that may seem frivolous to some people. But the fact that one can't immediately apply that to the good of the human race is a shallow criterion. The important thing is, does it contribute to our understanding, and I think it's fairly obvious that it does."

> The CMU hacker of today is no hero, just a staple of this college where people are paid to play games.

High-Tech has been very successful playing and winning at chess. So successful that human chess masters are afraid to play it. It's beaten players who have beaten world champions, and Berliner hopes that someday soon it will take an official championship. "If we can succeed in that, it will have high significance in the world of understanding, high significance beyond just chess. That's my bag at the moment. If it came right down to it, I'd be happy to pay them to do what I'm doing."

Carnegie-Mellon is not all computer wizards like Berliner. There are liberal arts people who think computers are diabolical, and there are drama students, music majors, and others who see hackers as grime from the great unwashed — the Hacker Geek, who you wouldn't want to stand next to and can only be found at a terminal, tapping, tapping, tapping away. The school has had its share of "crackers," too — upstarts who figured out ways to crash the entire system by creating nesting subdirectories ad infinitum until the system memory dried up. But those pranksters are not in vogue anymore. They've long since been expelled, their glamour tarnished by succeding waves of students who have better things to do with computers than to crash a system, just to prove it can be done.

The CMU hacker of today is no hero, just a staple of this peculiar university set-up where people are paid to play games. There are plenty of jobs in programming and plenty of research money to support the computer enthusiast with itchy keyboard fingers.

"You see this post on the Bulletin Board, where they want 50 hackers for this project. These guys are hacking and geting paid for it," says Chris Johnston, a senior who likes to read bulletin boards because "people get messages from other boards around the country — people in Stanford and so forth. Hackers like to keep in touch."

While walking along the campus path with Johnston, I bumped into Bruce Eppinger, a self-proclaimed hacker who wears a grungy sweatshirt with obvious pride, and chose Carnegie-Mellon because of the availability of computers. "It was between CMU and RPI [Rensselaer], you know, the hacking schools. And I didn't apply to Stanford until it was too late. At CMU you have more access to computers than at other schools. Here, any amount of hacking you want to do, there are resources to do it. There are lots of computers here, too. It's very rare that you run out of hacking time, there's more computers than you know what to do with.

"I hack about 150, 200 hours a month."

Do you live to hack?

"Well, there are some things I'd rather do. . . but one of my favorite things about hacking is that it pays well. I go home every summer and hack for this company in Connecticut that hired me when I was in high school.

"In programming, there's a lot of drudge work, too, and somebody has to do it. For AI projects, they pick up your basic CS majors at $4, $5 an hour and let 'em hack to their heart's content.

"In Wean Hall here at 3 or 4 in the morning, if you see a bunch of people carrying cokes and teddy bears. . .you'll know where the hackers are." ce

DO GAMBLING PROGRAMS CRAP OUT?

Continued from page 35

so many of the absolutely crucial factors that it isn't really worth a second thought.

The Racing Analysis Package is typical of programs that are written quickly and carelessly. The result is a package that is beset by more than its share of annoyances. For example, in the harness racing segment, two of the three pieces of information required are the times of various races for each horse. As an example, 1:58:3 would be the usual way to write a final time of one minute, 58 and 3/5 seconds. In this program, however, you must use commas instead of colons, writing the time as 1,58,3. Since this is over sixty percent of the information you enter, it would be nice if the programmers had allowed you to enter it in the conventional style. It also would have been nice if they had bothered to add some graphics to the program, at least to make it look a little better than it actually is. However, the program consists of just a few typed lines with spaces for you to enter information from the Racing Form or program. That's all you get.

PDS Sports had come out with a much more sophisticated (and expensive) program called *Thoroughbred Handicapping System I*. It's much more comprehensive than the Software Exchange program, but even so it really doesn't cover enough bases to be recommended.

Unfortunately, every one of those little numbers on a racing program has some significance in a certain type of race. Software programs that try to reduce the amount of work you have to do by eliminating a lot of the information you'd have to enter for each race end up omitting something that may have just given you that 20-1 horse in the daily double.

All of this, of course, presumes that there is a system that can be programmed and used time after time to give you a high-enough percentage of winners to make money at the track. Despite what some of my best friends insist, I've yet to hear of such a system except from people who are trying to sell it. And I always wonder why they're so desperate to sell it if it works as well as they say.

Probably the very best advice that can be given to anyone contemplating the purchase of gambling software is this: If it's a game of skill, you may be able to practice enough to actually become a winning player. If it's a game of chance alone, you can't improve your chances of winning by practicing at home. You'd better just like playing the game on your computer. If the software claims to be a computerized system to help you manage information and therefore make better bets, assume that it's probably a system for getting more money for the people selling it so they can cover their own bets.

Of course, there are always those who are sure that all this advice is pertinent for everyone but them, because they've just bought this absolutely unbeatable system. Hope springs eternal in some breasts, you know. These people are probably the ones who are going to buy new software that claims it will help you to correctly pick the next lottery number. I'm not even going to tell them how to get a hold of that one. There are limits, after all. ce

BRUCE ARTWICK'S FLYING CIRCUS

Continued from page 21

"I used to go out to computer swap meets and sell graphics software on the weekend," says Artwick. "I remember giving a talk and mentioning that I was thinking of writing a 3-D flight simulator program. There were gasps from the audience. I figured there must be a demand for such a program."

Through the summer and fall of 1979 Bruce Artwick wrote the original version of the *A2-FS2 Flight Simulator* for the most promising graphics-oriented personal computers of the time, the Apple II and Radio Shack TRS-80 Model I. Considered primitive by today's standards, the program's jagged outlines on a black background were the best 3-D graphics yet devised for personal computers. Since *Flight Simulator*'s first incarnation pre-dated reliable disk drives, its initial release was on cassette. Explains Artwick: "We had to do everything ourselves. Stu and I duplicated the cassettes. I typed our first manual and did all the graphic art." Their efforts were rewarded with a best seller. In 1980, SubLOGIC purchased its first plane — a used Cessna 150.

Artwick attributes SubLOGIC's early success to being based more than 100 miles south of Chicago in Champaign: "Our overhead was low. It was cheap to live here. At one point, when we had no income for several months, I was able to rent a trailer home for $50 a month. For awhile, we operated SubLOGIC out of Stu and his wife's house trailer across the street."

Moment describes Champaign as "a good place to set up for the long term. It's also a place that encourages flying, because there's always an incentive to fly *out of* Champaign." Moment is the more outgoing of the two and also much more the flying enthusiast. In addition to motorcycling, Artwick is an avid skier and a skillful pianist. (He doesn't use computers to play music, professing not to like their sound). He's 31 years old and single.

The SubLOGIC partnership hasn't always been a smooth one. After their first taste of success, Artwick and Moment disagreed on the company's direction and decided to go their separate ways; Moment formed SubLOGIC Communications and sold non-flight related software, while Artwick continued to work on his flight-themed projects (including the popular *Night Mission Pinball* program) under the banner of SubLOGIC Research and Development. The two kept their distance across town, meeting occasionally to discuss business at Murphy's Pub in Champaign. Finally, in 1982, they agreed to join forces again under one office roof. Today, SubLOGIC employs 25 people and is seeking to hire more good programmers.

SubLOGIC's software sales soared when the company started writing programs for the IBM PC. Almost simultaneously IBM's personal-computer-software division and Microsoft, creator of the PC's MS-DOS operating system, had approached SubLOGIC to write a direct translation of *Flight Simulator*. "At the time, there was very little software for the PC," says Artwick. "The machine hadn't established itself yet, and it was a risk to write a program for it, especially when the PC didn't have graphics built in." Artwick first toured IBM's Boca Raton, FL personal computer headquarters as well as Microsoft's Bellevue, WA facilities, then went out and bought the first PC he could find in Champaign.

Though the design of the machine seemed hasty (the IBM graphics card Artwick purchased had components clipped off to correct design flaws), Artwick was pleasantly surprised by the PC's performance. "I realized that better graphics were possible for the *Flight Simulator*. I decided to make the instrument panel more realistic. I added three-dimensional shading in color. The program grew from there." Since IBM had a policy at the time of limiting possible royalties to $100,000, SubLOGIC, ever confident, signed a publishing deal with Microsoft.

The Microsoft *Flight Simulator* was a hot item during the 1982 holiday season. Business users, who wouldn't dream of playing *Pac-Man* on the PC, suddenly found themselves justifying the count-

less hours being spent in front of the computer "playing" *Flight Simulator*.

The first IBM version, with its elegant, solid 3-D color graphics, came with a few bugs, however, such as the disconcerting practice of displaying shades of grey on a usually intensely-colored RGB monitor. Artwick corrected the flaws, and to this day continues to upgrade the Microsoft *Flight Simulator*. There have been six separate releases, over one hundred changes (including improved stability and response) and features like the option permitting the use of two joysticks and a mouse added. "We're constantly improving our programs," perfectionist Artwick observes.

Whatever improvements are made in the Microsoft *Flight Simulator* soon find their way in to SubLOGIC's own *Flight Simulator II*, which now features the same kind of stunning, color 3-D graphics as those in the IBM PC version. Technically speaking, SubLOGIC does most of its development work on IBM PCs and then automatically translates the programs into fast-running machine language versions for Apple II, Atari and Commodore 64. In the late '70s, when Artwick and his cohorts decided they were into personal computers for the long haul, they spent six months developing graphics-programming tools for the IBM PC that could then be translated to other machines. The result, called Logol, is derived from a language for 8086 chip commands as well as Artwick's pioneering A2-3D1 graphics software, first begun in 1976.

Improvements in the *Flight Simulator*'s are often the result of suggestions from the program's fans. Sacks of effusive letters come in from flight controllers, retired Air Force pilots, and even the "One Arm Bandit," a Texan who has flown for 20 years with an artificial right hand. "It is interesting to find myself comparing *FS II* with a real airplane, and it is certainly complimentary," reads a typical letter, this one from James Russell of Seattle. "When discussing *FS II* with others I find it common to say, 'Well, in some ways it is a lot easier to fly than a real airplane, but in other ways it is a lot harder.' One way in which it seems easier has to do with its stability. Landing is the one phase of the simulation where the *FS II* is a lot harder than real flying [and real airplanes are hard enough to land]. This is because it is extremely difficult to judge the height of the aircraft above the runway surface."

Once you have an inkling of just how complex the *Flight Simulator* program is, like the bumblebee, it's a wonder it can fly at all. According to Bruce Artwick's recently published technical guide for Prentice-Hall, *Microcomputer Displays, Graphics, and Animation*, "Simulation software must perform three tasks simultaneously: display generation, sampling of controls, and the simulation itself. With only one computer available this is not possible, because a computer can only perform one task at a time. The computer has one feature that allows it to compensate for this weakness, however: speed. Real-world events happen very slowly compared to the speed at which a computer can make many small calculations. . .Simulation software structures are designed to utilize a computer's speed in a way that makes it appear that three tasks are being performed at once."

Because *FS*'s graphics are so clean and detailed, it's easy to overlook the programming virtuosity at work. Among the breakthroughs: "high speed interger clippers," the mathematical formulas which allow the screen display to scroll and redraw itself quickly, and "derotations," the calculations allowing a figure that's been rotated to be unrotated. Another trick Artwick is particularly fond of: sampling your control responses and anticipating what you will do next — so there is no lag between control and display.

FUTURE FLIGHTS

"I've always been disappointed by the level of graphics performance on microcomputers," admits Artwick. This from the man who almost singlehandedly tamed personal computer 3-D graphics. Sure, resolution leaves much to be desired, the edges of objects are often jagged and the animation sometimes flickers, but what Artwick has accomplished on micros is nothing less than the miraculous. The latest Apple II series and IBM PC versions of *Flight Simulator* even include 80 airports and nearby landmarks, along with the complex program itself, on a single disk. And now he's taken advantage of the more accurate bit-mapping and higher resolution of the Macintosh in the newest versions of *Flight Simulator II*. (Versions for the Commodore's Amiga and Atari's "Jackintosh" are also being whipped into shape.) What more could Bruce Artwick possibly have in mind for microcomputer graphics?

"I see the possibility of doing amazing things," he says calmly. This year, for instance, SubLOGIC plans to offer a high-performance add-on circuit board for the IBM PC that will allow personal computer graphics to rival those of expensive minicomputer systems. Artwick claims that this new hardware is capable of producing real-time, film-quality animation at animation rates of thirty to sixty frames per second. Presently, the animation rate on a PC is one or two frames per second; on a supercharged IBM AT, the rate is only four frames per second.

The first generation of these boards is expected to sell for $2500 — roughly the cost of a PC — and provide performance "as good as systems selling for $20,000," according to Artwick. To promote its graphics boards, SubLOGIC will be developing eye-popping versions of *Flight Simulator* and *Jet* to run on it, as well as a *Space Simulator* program that will eventually appear in versions for most personal computer. "We want to get out into space, and we don't want to limit it to the Space Shuttle," says Artwick. "We want to take you past Saturn and even into the next galaxy. It's a big project, because we want all the graphics to be right."

As if all that weren't enough, expect SubLOGIC to eventually produce its own set of microprocessor-connected flight controls, complete with motion feedback to simulate an airplane's reactions to yolk and peddles. Consider this possibility: combine IBM's PC with SubLOGIC's high-performance graphics board, flight controls and *Flight Simulator* software and you have a commercial-grade trainer for around $7000 — a fraction of the six-figure price tag of current models. "I won't confirm or deny that we'll come out with a commercial flight trainer, though we do plan to branch out in the future," Artwick adds. "If we did build professional-grade flight simulators, they wouldn't just be for training pilots. We would want them to be affordable for the average person."

After being personally responsible for SubLOGIC's technical breakthoughs, Artwick now does relatively little programming himself. "I'm trying to be more of a manager and delegate the programming work," he explains. But you can sense that he misses the absorbing, all-night sessions of writing computer code. "Right now, I'm considering what direction to take. If I find something I like, I will probably do some more programming myself." Judging from his previous breakthroughs, whatever horizon Bruce Artwick chooses to conquer, the result is bound to be uplifting for the world of computer entertainment. **ce**

FUN CITY

Continued from page 43

wildly. A Guardian Angel comes into the car.

▶ Angel, a man is shooting over there.

▶ The Angel ignores you. He is collecting money to support the Guardian Angels.

▶ Hide under seat.

▶ You hide under the seat. The train

pulls into the station.
▶ Exit train and fast.
▶ Done. You are in Grand Central Station. There is a stairway up.
▶ Examine globes.
▶ There are no globes here. That was the other station.
▶ u
▶ You climb the stairs. You are in the cathedral-like vaulted waiting area of Grand Central Station. Bag people mill around by the thousands. There is some writing over the magnificent doors to the south.
▶ Read writing.
▶ The writing says, "42nd Street."
▶ s
▶ Your way is blocked by thousands of bag people. One of them, a woman wearing three pairs of sunglasses — one on top of the other — approaches you. She says, "What if I didn't pick up a package that was sent to me in 1982?"
▶ Woman, it would be sent back.
▶ The woman starts shrieking at you. You back away. A man in a green suit, wearing roller skates with a pair of ice skates hung around his neck proclaims, "Nuke the cockroaches!"
▶ Man, I agree.
▶ He screams at you too and doesn't let you pass. You collapse on a bench in despair. A businessman enters heading for the exit to the south. The bag people mill around him. A man in a shiny suit and oily fedora says, "You've got to hunt those buses down and kill them!" The businessman says, "Yondah lies the castle of my faddah!" The bag people let him pass.
▶ s
▶ A man with no teeth approaches you. He's singing, "99 bottles of beer on the wall, 99 bottles of beer. . ."
▶ Man, yondah lies the castle of his faddah!
▶ The bag people smile and applaud. They step aside to let you pass.
▶ s
▶ You leave Grand Central Station. There is a pack of cabs parked outside. You would like to take a cab the rest of the way home but you have no money. You see a blind man with a tin cup. He is shaking it.
▶ Listen to cup.
▶ It sounds full.
▶ Take cup from blind man.
▶ You would take a cup from a blind man?
▶ Yes.
▶ Okay.
▶ Take peanut shells from pocket.
▶ You already have them.
▶ Take money. Put peanut shells in cup.
▶ You reach your hand into the cup to take the money. All you pull out are some peanut shells. Someone has been there before you.
▶ Put peanut shells in cup.
▶ Done.
▶ Give cup back to blind man.
▶ Done.
▶ Search ground.
▶ A search of the ground reveals nothing pleasant.
▶ w
▶ As you walk west, your shoelace comes untied.
▶ Remove shoes.
▶ Done.
▶ Sell shoes.
▶ You stand on 42nd Street and try to sell your shoes. You say, "Imported Italian shoes. Check 'em out. Imported Italian shoes." A businessman is interested. He tries them on. They fit. He gives you $25 for them. You take it.
▶ Look for cab.
▶ There is no cab in sight.
▶ Look for cab.
▶ As you look for a cab, an alarm goes off behind you. A youth comes streaking out of the athletic store carrying a stack of boxes in his arms. As he runs off, a box drops off the top of the stack in front of you.
▶ Open box.
▶ Inside is a pair of Adidas running shoes, size 8½.
▶ Take shoes.
▶ Taken.
▶ Put shoes on.
▶ Miraculously, they fit perfectly.
▶ Look for cab.
▶ A cab comes cruising down the street.
▶ Hail cab.
▶ You hail the cab. It pulls up and stops in front of you. A well-dressed Yuppie couple race ahead of you, open the back door and leap into the back seat shouting, "We were here first." The cab roars off in the direction of Columbus Avenue.
▶ Hail cab.
▶ Another cab stops.
▶ Enter cab.
▶ You bump into the door trying to do this.
▶ Open door.
▶ Which door do you mean, the front door or the back door?
▶ Oh, come on. Enough is enough.
▶ My, my, but we're testy.
▶ Open back door.
▶ Say please.
▶ Please.
▶ You open the back door.
▶ Enter cab.
▶ You get into the cab.
▶ Close back door.
▶ Closed.
▶ The cabbie looks at you expectantly.
▶ Cabbie, take me to 106th Street and Riverside Drive.
▶ The cab driver burns rubber, going from 0 to 60 mph in less than a second. He speeds past yellow lights and practices his slaloming technique on pedestrians. The cab is crowded with pictures and slogans. One says, "Have a nice day." Another says, "America — Love It or Leave It." There is a photograph of the driver in an army uniform. As he bullets along, he tells you he thinks Bernard Goetz is a hero. He takes the army picture off the sunvisor and hands it to you. You look at it. He enters Central Park at East 72nd Street and turns north. Suddenly, he's racing at 100 miles per hour. You are scared to death.
▶ Cabby, you can just let me out at 72nd and Central Park West.
▶ The cabby turns fully around and says to you, "You said 106th and Riverside."
▶ Cabby, that's close enough.
▶ The cabby is incensed. He brakes to a sudden halt, and you lose your gold crown when you bang your mouth against the hard plastic divider. But you're okay.
▶ Cabby, what's wrong?
▶ He yells, "You want to get out there? You'll get out here!" He kicks you out of his cab and roars off singing the John Birch Society anthem.
▶ Look
▶ You are in Central Park. You are in Central Park all alone. You are in Central Park all alone in the middle of the night. There is no one else there. There are bushes to the west. The road goes north.
▶ n
▶ You start walking north. You hear a noise in the bushes. Two muggers jump out and demand all your money.
▶ I thought you said no one else was there.
▶ I was wrong.
▶ Duck into bushes.
▶ The muggers try to follow you.
▶ Dodge and weave.
▶ You dodge and weave.
▶ The muggers dodge and weave.
▶ Run.
▶ You run. As you run, you notice a couple of joggers heading towards you. There's safety in numbers, you know.
▶ I know. Don't patronize me. Roll up pants.
▶ You roll up your pants.
▶ Take off jacket.
▶ You take off your jacket.
▶ Fall into step next to joggers.
▶ Fallen.
▶ You know what I mean.
▶ You fall into step next to the joggers. They run with you for a while in silence. Then one says, "What's your marathon time?" There is an exit to the west.
▶ w
▶ You are on 81st Street and Central Park West. The road goes west.
▶ w
▶ You come to a Jamal's All Night Sushi Bar and Nautilus Club. There are three

very tall, very robust looking youths standing in front of the doorway. The entrance is west.

▶ w

▶ The youths block your way. You notice that one of them is wearing skull earrings made from real skulls.

▶ Youths, how goes it?

▶ The youths laugh at your primitive attempt to make conversation. One of them is picking his teeth with a nail. They talk among themselves.

▶ Listen to youths.

▶ They are talking in Spanish.

▶ Consult phrasebook.

▶ Done.

▶ Speak Spanish.

▶ You don't have to know Spanish to finish this adventure.

▶ You do if you want to finish it alive.

▶ Good point. Using your flawless Spanish you tell the youths that they have mighty pretty eyelashes. They thank you.

▶ Speak more Spanish.

▶ You tell them you're afraid you'll arrive too late to accompany them on the harp. They let you pass.

▶ w

▶ Inside Jamal's you order a cup of coffee to go. You need it. It costs 45 cents.

▶ Pay Jamal.

▶ He gives you change.

▶ e

▶ You are back on the street.

▶ n

▶ You walk along sipping your coffee. When you're finished you realize you would like another cup. You see a deli to the west.

▶ w

▶ You are in front of Quiche and Tell, a very upscale deli. The entrance is to the north.

▶ n

▶ Inside Quiche and Tell there are a bunch of Yuppies sitting around in loafers with no sox. Some of them are wearing Topsiders. They laugh at you and say, "What did you do, sleep in your suit?" This is obviously a hilarious Yuppie joke. Everyone laughs. The clerk looks at you with disgust.

▶ Clerk, give me a cup of coffee.

▶ The Yuppies scream with laughter. "We don't sell coffee here," says the clerk. "We only sell capuccino."

▶ Give me a capuccino, then.

▶ The clerk gives you a capuccino.

▶ Give clerk 45 cents.

▶ Done.

▶ s

▶ The clerk bars your way. He looks mad.

▶ What's wrong?

▶ The clerk says, "Hey! You still owe me $4.05."

▶ A cup of coffee costs $4.50?

▶ "That's right," says the clerk. "And it isn't a cup of coffee. It's capuccino."

▶ Give clerk $4.05.

▶ Done.

▶ s

▶ The street goes east and west.

▶ e

▶ You're at a crossroad. You can go east, west, north or south.

▶ n

▶ You walk up Broadway. On the corner of 104th Street and Broadway, a lively game of three-card monte is going on. You stop to watch. When a cop comes strolling up the street, the game discontinues faster than you can say, "Queen of Hearts." A drunk hands you a half-full bottle of Chianti and runs off. The policeman looks at you quizzically.

▶ Officer, I can explain. . .

▶ Do you have any identification?

▶ Inventory.

▶ You have:
no identification
very little self respect left.

▶ No.

▶ The cop tells you he's going to have to take you in and book you.

▶ Officer, please come with me.

▶ The officer reluctantly follows you to your apartment building two blocks away. The doorman is there.

▶ Manuel, tell the officer about me.

▶ Manual isn't talking.

▶ Manuel, tell the officer about how I live here on the 12th floor with a great view of the river and the chance to buy at the insider's price.

▶ Manual tells the officer he never saw you before in his life. The officer reaches for his handcuffs.

▶ Throw wine bottle.

▶ You throw the wine bottle behind the officer. He is momentarily distracted and runs out the door to see what's going on.

▶ Manuel, tell me about the blonde and the leather bar on Second Avenue.

▶ Manuel looks agitated. He develops a tic. The officer returns.

▶ Manuel, tell the officer about me.

▶ Manuel tells the officer about how you live on the 12th floor in a great apartment. How generous you are at Christmas. How you always wipe your feet before coming into the lobby. How you have job on Wall Street. You have to stuff Manuel's mouth with your socks in order to shut him up. The policeman tells you he's sorry he bothered you and leaves.

▶ You take the elevator up to your apartment. The phone is ringing.

▶ Answer phone.

▶ You pick up the phone. It's the bar. They found a wallet with your name in it in the men's room. They want you to come and get it right away or they're going to give it to a redheaded woman who claims it's hers. She told them it was leather and that's enough for them.

ce

A HORNET THAT DOESN'T FLY

Continued from page 23

order to determine who has the potential to be an Ace and who may wash out under real conditions. Trainees can play against each other, instructors, or the computer. The simulator also allows the military to set up scenarios that wouldn't be possible with real Hornets flying over the Nevada desert proving grounds.

An IMI-500 minicomputer, made by Interactive Machines Inc. of Westlake, CA, creates the three-dimensional, spherical images inside the Naval Air Station dome at Lemoore, CA. The IMI-500 is the super minicomputer used to generate graphics for the space shuttle simulator at the Johnson Space Center in Houston, TX as well as animation for the television series *Airwolf* and *Knight Rider*.

Strapped into the simulator cockpit, the pilot faces the Head-Up Display (HUD) — a glass windscreen that flashes status messages. The HUD keeps him aware of his Hornet's flying condition and the nature of a target without having to take his eyes off the enemy. Further adding to visual ease, the cockpit is configured to allow the pilot a 360-degree view of earth, sky and other craft. Sound effects include the engine's variable throttle levels, airstream, missile and rocket launchers as well as communications with base and friendly aircraft.

As his plane takes off from the base or an aircraft carrier, the trainee feels the lift and pressure changes inside the chamber. Different weather conditions are built-in. If the pilot encounters turbulence, hydraulic lifts rock the craft. When banking the plane into a dive for a bombing run, the pilot experiences the rush towards the ground. The throttle, stick, and rudder pedals also have true force-feel. A pneumatic control system, incorporated into the pilot's G-suit, varies the pressure at different altitudes and speeds. If a pilot hits his speed brake for a better aim on a target or turns on the afterburners to get away from an adversary, the chamber reflects the change in pressure. Grayout cues are given to the pilot when they encounter high G-forces (under which, in real flight, he could not remain conscious).

For combat, the simulator comes with all the armament of a real Hornet. The trainee is confronted with a number of tactical decisions, such as: Should he launch the long range radar-guided Sparrow missiles or close in quickly and use the heat-seeking Sidewinders? To aid his decisions, the simulator includes the Hornet's state-of-the-art radar. The

F/A-18 radar can project high-resolution ground maps for both navigation and attack. It will also identify when the plane is entering space scanned by enemy radar. The combat radar is tied in to the fire controls so that detection, tracking, and engagement of hostile aircraft and missiles can be made without visual contact and in all weather conditions. All of the fire buttons for the air-to-air missiles, air-to-surface missiles and the 20-millimeter cannon are located on the stick or throttle. The simulation doesn't end when the mission is completed; even computer pilots are required to go through debriefing.

The real Hornet, designed by McDonnell Aircraft Company, is considered to be the Navy's top fighter and is expected to carry over into the 21st century. The F/A-18's relatively small size (56 feet long with a 40-foot wing span) and smokeless engines make it less detectable — and consequently safer. Other "get home" features include a second engine, built-in fire extinguishers, and self-sealing fuel lines. A mechanical backup flight-control system allows the pilot to take over should anything happen to the electronic system.

The F/A-18's maneuverability allows pilots to get into and out of target areas quickly. The Hornet can move at nearly twice the speed of sound (Mach 1.8+). The engines are capable of thrust eight times the F/A-18's own weight. The beauty that many Navy pilots see in the Hornet is its good "legs." The Hornet's "legs" (an aviation term for range), is about 2,000 nautical miles for a non-combat flight and about 500 when engaged in combat.

Despite the cost of the F/A-18 simulator, it will eventually save the military money by not wasting fuel, weapons, and valuable flying time of the real Hornet. While this may be one plane that's grounded, it's still effective in earning a pilot his wings. ce

PCjr: REQUIEM FOR A LIGHTWEIGHT

Continued from page 31

use a more sophisticated micro, then join corporate America where he might eventually requisition $10 million worth of office data-processing equipment. For those of us who live on weekly salaries, such long-range planning seems far-fetched. But it is just such ideas that go through strategic planners' heads when they "position" a product line.

They also consider product conflicts. And it is this factor that many critics believe doomed the PCjr to oblivion from the start. Some said that IBM intentionally crippled the jr as a business machine so it couldn't cut into booming PC sales, that it was saddled with limited memory and a weakling keyboard so that no office manager in his right mind would choose to save a few thousand bucks by opting for a PCjr instead of the almighty PC. Well, the theory does seem a little farfetched.

IBM denied the charges. They pointed out that the PCjr was actually ending up in many small offices (like my own) where the compact CPU was a nice change from desktop-engulfing PCs. They further stated that their littlest micro could be integrated into office Local Area Networks to make use of PC hard disk storage, share printers and peripherals and even tie into mainframe muscle. They denied all they could and repositioned the product, but the spector of the keyboard lingered on.

Finally, even the thick-skinned computer giant couldn't stand the criticism any longer. During the summer of 1984, a new keyboard was introduced for the PCjr that finally gave the writers what they had been demanding all along, and, incidentally, one which gave the machine a more distinguished office look.

IBM was humbled, but it also ran true to form; it passed these upgrades to its jr achievers free of charge. Even the people's computer company, Apple, didn't go that far when they upgraded the Macintosh to 512K. Not only did the new keyboard score a PR coup for IBM, but it convinced the faithful that computers would come and go, but the PCjr would prevail.

And, indeed, thanks to an avalanche of advertising and promotion, the PCjr finally began to sell. A $500 price drop certainly didn't hurt, nor did new expansion products that could pack enough power to the side of the jr to make it a full-blown, ass-kicking micro that could even run *Lotus*. Not even the Apple IIc, with which the product was most price competitive, could make such a claim.

For several weeks those of us who had a stake in the success or failure of the PCjr were in an upbeat mood. Even former sixties radicals (now high on the steps of corporate ladders) agreed that "the establishment" had come through. And, in fact, rereading a series of columns I wrote about the machine during the fall of 1984, my mood was so unabashedly bubbly that I was apparently blind to the odd turn of events that was about to unfold.

In spite of the promotion with which IBM was supporting the machine, and despite word that it was actually starting to find retail success, the magazine I wrote for was going nowhere fast. When it was founded, even before the jr was launched, there was promise of big, fat issues, considerable editorial space and a gravy train of unlimited freelance assignments. No such luck. During the PCjr's short-lived heyday a funny thing happened to that magazine; it was getting thinner by the issue. Despite the fact that IBM was claiming big things for jr, none of the third-party corporations that supplied peripherals and software for the product were seeing the results. No sales meant no advertising, which ultimately meant no magazine.

It seemed that the publisher's timing was off. All the sales figures indicated that the tide had turned, that IBM was about to accomplish what no computer before had dared try to achieve: to create a purse out of a sow's ear.

Frankly, they couldn't have known what was about to happen during the Christmas of 1984. As a result of drastic price-cutting in some markets, the PCjr and a monitor was selling for just $750. With the new keyboard and the promises of life after post mortum, it was the bargain of the season — directly price-competitive with the Apple IIc, but with the added promise of IBM longevity and PC compatibility strongly in its corner.

My in-laws even bought one at my suggestion. They wavered for a while, and expressed doubts because of the machine's false start. But when the price for an entire system dropped under $1000, it was frankly just too tempting to resist. My in-laws naturally trusted my judgement, but it wasn't as if I were promising the world for a new and unproven startup. I had the big blue initials to back up my advice. You may have heard the office data-processing credo: "Nobody ever gets fired for buying IBM."

My in-laws weren't alone. The holiday season of 1984 will be remembered as the year IBM stole Christmas. A significant upsurge in retail activity convinced even the hardened naysayers that IBM finally had a winner on its hands and that the pricepoint for home computers had suddenly risen to the $1000 range. "The American public wanted a more sophisticated home machine" was how the phenomenon was being explained.

Regardless of how it was happening, things continued looking up for the machine. *Consumer Reports* picked the PCjr as a "slightly better" buy than the Apple IIc in its November issue. There were reports of large machine-sales to corporate users. I even wrote an article on the growing range of PCjr add-ons that could boost this puny micro to 512K, add a second disk drive, attach it to a Local Area Network or add a Winchester hard disk drive. Somebody had even dreamed up a way to upgrade the lowly PCjr into a full-scale PC AT. And, thank

goodness, Broderbund had finally released *Lode Runner* for the PCjr.

Those of us who had suffered with the machine from the start now perched the chiclet keyboard above our mantelpieces as one would a war trophy or a moose head. That chiclet was proof of someone who had indeed been the first on his block.

Then suddenly the unthinkable happened. In March 1985, IBM pulled the plug on PCjr.

Naturally the announcement was accompanied with IBM's promise to support the product with software, parts and service (until 1990). They simply explained that their expectations for the machines had been "overly optimistic." That didn't soothe the ire of my in-laws who were convinced they had been sold a white elephant by some clever Christ-

Live Games For A Dead Machine

The PCjr may have had some problems, but its ability to function as a game machine was never one of them. In fact, with the addition of a joystick (about $50) and, in some cases, 128K RAM, jr can play with the best of them.

Here's a quick rundown of some of the better-known and better game packages for the PC's misbegotten progeny:

Lode Runner *Broderbund, $35)*: A challenging chase-and-climb game with nice graphics and 150 levels of difficulty. You won't get tired of this one fast.

The Game Show *(Advanced Ideas, $40)*: This self-study aid has an arcade-style format similar to the TV game show *Password*, in which players try to guess the secret word or phrase. Choose from 24 subject categories or make up your own form of on-screen *Trivial Pursuit*.

Tiao Ch'i *(Micro Classics, $25)*: On-screen Chinese checkers with beautiful graphics. You can choose from three difficulty-levels and play opposite another player or the computer.

Styx *(Windmill Software, $40)*: A home version of the arcade game *Qix*. Players must shade off areas on the board before one of the eight lightning bolts destroys the work in progress. A nice change of pace from the usual "save-the-universe" themes.

Infidel *(Infocom, $50)*: An interactive fantasy-adventure game that takes place somewhere along the Nile. You solve puzzles to stay alive and seek out the pyramid's hidden treasure. Humorous and fast paced.

ColorPaint *(IBM, $100)*: A cartridge program that takes full advantage of the jr's graphics capabilities, with a total of 16 colors and 32 shades and patterns. The program requires a mouse, and allows the user to design either freehand or via its pulldown icon menus — virtually a color remake of Apples *MacPaint*. Completed works can be stored to disk, with a limit of 11 pictures per disk.

Run For The Money *(Scarborough Systems, $40)*: A colorful, sci-fi game that teaches the workings of supply-and-demand economics. The players are given the role of Bizlings — interplanetary entrepreneurs who are stranded on an imaginary planet called Simian. In order to pay for repairs on their ships and leave Simian, the Bizlings compete against each other selling "zananas," a local delicacy, to the planet's inhabitants. Whoever blasts off first wins.

Songwriter *(Scarborough, $40)*: One of the few music software programs for the jr, this one allows you to make up and store your own songs while learning the basics of music theory. No prior musical knowledge is required.

Word Challenge *(Hayden Software, $20)*: A computer word game based on Parker Brothers' *Boggle*, in which players form as many words as possible from a grid of randomly selected letters. In this version, only one player can play at a time against the computer. There are 26 difficulty levels, and scores are checked against the program's 90,000-word dictionary.

Championship Boxing *(Sierra On-Line, $35)*: A knock-out of a program that allows you to arrange your own championship bouts. Select contenders from any of the program's 53 fighters (everyone from John L. Sullivan to "Boom Boom" Mancini) or create your own.

Rocky's Boots *(IBM/The Learning Company, $49.95)*: An educational software classic for a elementary school kids, it teaches computer logic and Boolean algebra by having players build electronic machines to solve a variety of puzzles.

Baron *(Blue Chip Software, $59.95)*: The object here is to turn $35,000 into $1,000,000 in sixty turns. Pick your own real estate deal, borrow money from banks, and put your bundle on the line. The game sports mediocre graphics but it's a good challenge for any entrepreneur.

King's Quest *(Sierra, $49)*: The best adventure game for the PCjr. Maneuver noble knights and evil wizards around the screen with impressive three-dimensional perspective. The ensuing story is an amalgamation of fairytale and folklore. Make sure to plug the jr into your stereo for this one — chirping birds and heralding trumpets accompany the play.

Flight Simulator *(Microsoft, $49.95)*: This simulation game classic puts you behind the controls of a single-engine aircraft and teaches instrument-panel control while your tail is still stuck to the ground. The detail of real world airport maps and 3-D animation are superb. It's a classic that'll last you for years, even if it does take you a couple of tries to get up, up and away.

Typing Tutor III *(Simon & Schuster, $49.95)*: Straightforward drill and practice is combined with a variation on the standard *Space Invaders* game theme; zap those falling letters to avoid being zapped yourself. There are enough tricky combinations of letters (and those dreadful numbers) to keep even a steno pool veteran stumbling over his fingers for several weeks.

Universe *(Omnitrend, $89.95)*: Your job in this scientific role-playing game is to save an isolated space colony by finding a high-tech booster that preserves their contact with Earth. Packed on four 48K disks, hard-core sci-fi fans should find this complex program challenging and entertaining.

Incunabula *(Avalon Hill, $300.00)*: Build a civilization from prehistoric beginnings in this well-documented, colorful program. You establish political, economic, and military bases for your tribe while competing with up to six other players.

GATO *(Spectrum Holobyte, $39.95)*: A first-class World War II submarine simulation, this program lets you loose in the South Pacific. Navigation skill, and coordinating expendable resources like fuel and oxygen, ultimately determine your success.

Windham Classics Series *(Spinnaker, $26.95)*: This line of nonviolent, children's software includes adaptations of *Swiss Family Robinson*, *Wizard of Oz*, *Treasure Island*, *Robin Hood*, and *Below the Root*. The games generally combine good graphics with an intriguing storyline, for very educational play.

Ancient Art of War *(Broderbund, $44.95)*: This un-war simulation rewards you for outwitting your opponent instead of using brute force. Pit yourself against famous military heros like Genghis Khan, Alexander the Great, Julius Caesar and Sun Tzu. Your object is to capture the enemy's flag using stealth and conflict-avoidance.

Playwriter Series *(Woodbury, $39.95)*: This entertaining and sometimes unpredictable writing game helps you create stories by answering computer-generated questions along a standard plot line. The series includes: *Tales of Me* (an autobiography); *Adventures in Space* (Science Fiction); *Mystery* (a whodunit); and *Castles and Creatures* (fantasy). Woodbury says it will continue to produce software compatible with the PCjr.

—*Steven Schwartz*

mas marketing and the bad advice of a family member who owned (not one but. . .) two PCjrs.

What hapened? What caused IBM — a company that usually defends it ego like a virgin protects her chastity — to admit failure and leave several hundred thousand of the faithful out in the cold with so-called "orphan machines."

"We had heard rumors that IBM was going to kill the PCjr," says Sierra On-Line's director of marketing services John Williams, "but we were still surprised when the official decision came down. We're very disappointed, because the PCjr is the best of the 128K IBM compatibles, and we believed in it so strongly." Sierra wrote six of the original software titles — including *King's Quest* and *Homeword* — that IBM made available for the PCjr. Though Williams says Sierra will no longer specifically develop PCjr products (*King's Quest II* and Sierra's Disney software will soon be released, however), he maintains that "we'll always support the PCjr by default."

By the time this issue hits the newstands the answer to this "surprise" will most probably be self-evident. Mark my words: IBM isn't leaving the home computer market. The dumping of PCjr most likely means nothing more than a repositioning of the IBM product line. Remember that word "positioning." It keeps cropping up.

So here are three options to choose from. By the time you read this article one (none?) of them will have probably panned out:

(1) IBM pulled the PCjr because it was positioned poorly as a mate for the new generation of IBM PCs that were expected to arrive last April. What that means is that it could never use the business software that will be prepared for the 80286-based PC AT that has already been announced, nor the PC II that also promises to pack a more powerful chip, not to mention an expected move to 3½-inch disk drives throughout the line. So, expect the PCjr's follow-up to look much like the PC JX, a lower-cost PCjr with these mini drives that IBM is already marketing in Japan.

(2) IBM pulled the PCjr because the machine was poorly positioned to combat the latest wave of home computers — the MSX machines from Japan. Remember Howard Anderson's theory — that IBM is always wary of threats from beneath. Well, MSX promises to be a serious threat from beneath for any business that is staking its future on microcomputing in the home. At under $300 and with bundled deals with VCRs and Compact Disc players, MSX machines may yet prove to be Japan Incorporated's Trojan Horse entry into the computer marketplace. This threat is coming from the collective muscle of names that virtually define home electronics today — with one company in particular standing out: Hitachi. If IBM has one serious threat in the mainframe business — which accounts for the largest share of its corporate profits — it is Hitachi.

(3) IBM finally pulled the plug on the PCjr because the product would conflict with sales of the PC. I have a theory that, despite expected introductions of a successor, IBM will continue cranking out the PC for years to come. You've heard about Apple II forever? The folks in blue will probably be chanting the same thing about their hunks of circuitry that in generations to come will be found in garages or attics like a faithful, old tractor or a tube radio that still draws the signals. If this is to occur, this machine — that not so long ago cost an arm and a leg to own — will cost just a tip of a toe or a fingernail, maybe as low as $1,000 within a year. Ultimately, the PC will become IBM's home computer.

If I were a betting man I would bet on number two. But, then again, I bet on the PCjr, so that should give you an idea of why I stay clear of the tables in Las Vegas and Atlantic City.

Still, I'm usually protective of my PCjrs these days. If they were cars I would probably put them up on blocks, drain the gas tank, put them in the garage and forget about them for 30 years — at which time I probably could retire on their auction value among collectors of early American microphilia (not to mention the bonus I'll get for the original chiclet keyboards).

In the meantime, though, I'll probably keep working them. My collaborator still uses his machine eight to ten hours a day and we swap *Wordstar* disks successfully. And yes, I finally bought a copy of *Lode Runner*, as well as a half dozen other games that work on the machine.

When all is said and done, one important thing must be said in favor of the PCjr. It always works. My PC has gone down repeatedly; I've blown power supplies and disk drives. But that PCjr never fails, even if it does get bumped and jostled on the subway trip home at night. As far as I'm concerned, it's not an "orphan machine" until I stop using it.

REQUIEM EM PACEM? Not yet.

ce

COMPUTER DIET

Continued from page 27

Robbins has flavors, or at least it seems that way.

You can look at a graph that shows your calorie input by day over the course of the past week. (Your computer's sound system accompanies your good and bad days with appropriate whistles and Bronx cheers.) You can input your moods at mealtimes and then get a readout of which moods lead to overconsumption. You can check your intake of iron, calcium, protein, fat, and most other nutrients. You can even see a graph that projects the date at which you'll reach your ideal weight, based on your eating habits up until now. And more. Beyond the charts, there are graphics like the funny little man who appears on the screen every day after you finish telling the program what you ate. If you've stuck to your diet, he climbs a mountain and picks a flower.

A WEEK LATER:

I've actually lost eight pounds since I began this program — although Shirley would be the first to tell me that it's probably mostly water loss and nothing to get overconfident about. "Undereating doesn't impress me," she sniffed one day when my calorie count came in under 800. Tough old bird, that Shirley. She also tends to get testy and kvetchy if you don't make an appointment to see her at least every other day. "You know I dislike disruptions," she asked me once. "Why the delay?" This was followed by a multiple choice of possible excuses. Was I losing interest? Thinking of leaving the program? When I answered that I "don't have time to meet sooner," Shirley dripped sarcasm: "You mean you can't find a few minutes to work with me? Come on!?" Presumably Counselor Amy weeps softly at such critical diet junctures and Counselor George sends a disciplinary electric shock through your keyboard.

What Shirley would like most of all is to plan all my menus. This is a useful program feature — the meals are all nutritiously balanced — but once again, I'm running up against the Food Snob factor. When I tried to let Shirley do my planning, she suggested I eat things like canned pineapple and Bran Chex. Luckly, the meal planning is optional. You can also plan your own meals in advance, and either way, Shirley will oblige by printing out a shopping list based on all the ingredients you plan to consume for a week. Meanwhile, I've been adding more and more of my own favorite foods to the data base, which seems to be exceedingly roomy. My only gripe is that you can't categorize foods under more than one category. I eat a lot of Asian food that combines protein, starch, and vegetable, and I don't know how to list them. Luckily, the program offsets this flaw somewhat by asking you whether a particular food is high in iron, fat, calcium, and other nutrients (although not vitamins).

TWO WEEKS LATER:

I actually gained a pound back this week, but the program didn't react. Instead, it congratulated me for being seven pounds lighter than when I started out! Another day, Shirley asked me to name my number one problem food at parties. That was easy: beer! Then Shirley asked me what beverage I like to drink when I eat beer at a party. Okay, so beer isn't food. But this isn't "artificial intelligence," either. More like "artificial stupidity."

Maybe I'm just mad about that pound.

On the plus side, the program constantly comes up with something new. One day Shirley offered to write a letter to a friend telling how to be supportive of me when we go out to dinner. On another day, she had me tell her the names of my favorite restaurant, food, dinner companion, and article of clothing that only looks good when I'm thin; she then proceeded to write a little story starring me being virtuous while going out to dinner — and soon being so svelte I could wear a bikini. Granted, this stuff doesn't reach great intellectual heights, but dieting can be pretty monotonous, and every little bit of levity helps. On the more practical side, Shirley will occasionally comment on my previous day's intake of iron or fat. It's nice to know that someone's watching out for that stuff.

I have to confess that I've stopped reading most of my assigned chapters. I usually pass the homework quiz anyway.

EPILOGUE:
THREE WEEKS LATER:

I've since lost two more pounds, and while I'm not prepared to give the *The Original Boston Computer Diet* all the credit, I have to admit that it helped. I've become especially addicted to the program's graphs. (At this point, I wouldn't even recommend the program to someone who doesn't own or plan to buy a graphics monitor.) The truth is that most people on diets are boring, self-absorbed narcissists, obsessed with every ounce and calorie, and this program indulges that impulse to the hilt.

I've become especially fond of the charts and tables that show you your calorie count per day over a week or more. One of my biggest weaknesses in the past has been a tendency to have one night of pigging out and then to throw my hands up and say, "Well, I've blown it for good." Maybe it's just a psychological quirk, but I find that when I look at a graph showing the total picture, I can put that lone pig-out in some kind of perspective — and not reach for the *pate de foie gras en brioche* and another Heineken.

Who knows? If I can drop another 10 pounds, I may even become fond of Shirley. ce

TAKING MIDI TO THE MAX

Continued from page 47

"How much?"

"$5,000. Obviously, it's not for casual use. To give you some perspective, you can store 6,000 and 36,000 notes on 128K and 512K Macintoshes, respectively."

The Mac's graphics and portability is a big plus for musicians, he says. "The *Professional Composer* software from Mark of the Unicorn takes advantage of the Mac's potential by letting you print out high quality, almost publishable, sheet music and instrumental parts. If you're writing for a band, or preparing lead sheets for copyright, it's great."

"What about MIDI?"

"Mark of the Unicorn has promised a MIDI interface, but the only one we have for the Mac now is *Musicworks*. With the Musicland Utilities on *Musicworks*, you can convert MIDI recordings into *Professional Composer* files to print out. This combination is the most powerful system for the money if you want to go directly from played performances to the printed page without having to enter your music tediously, one note at a time."

Though the Commodore 64, according to our salesman, "has the most stand-alone music software available for it, which makes it a strong favorite if you're just starting out and want to gradually cross the boundary to more serious music making," he says "the Apple IIe is the most popular computer for musical applications." A complete system, including MIDI interface, could cost $2000. This is a reasonable investment, because of all the Apple software that's available.

He hasn't seen a MIDI interface working with the Apple IIc yet, but says it could form the heart of an easily portable music system for work on stage when one becomes available. Since we're talking about Apple and Commodore, I should mention Passport, which has more MIDI software for these machines than anyone else. The MIDI 4 recording software, with their interface card, makes a very nice starting point for someone. Also, Roland is distributing an excellent MIDI recording product called MUSE [for MIDI Users Sequencer/Editor], which is very easy to use and quite musical in concept.

"Some of the most sophisticated music software," he adds, "is available for the IBM-PC using Roland's MPU-401 interface box and card. These software products are complex and integrated, which makes sense if you are working in a professional environment, such as a recording studio.

"Do you have to buy an interface card or box for every one of these applications?" you inquire.

"Yes or no — it depends on the computer. As the necessary internal hardware needed to handle MIDI is slightly different from computer to computer, some manufacturers build MIDI right into their products. The Yamaha CX5 and Atari ST have the required standard 5-pin DIN jacks and hardware needed to directly connect to synthesizers with a simple cable. All the other computers require some form of external hardware interface, which range in price from $80 to $250."

It's obvious that music making is taking on new dimensions with computers being called into play more often. And you're glad to have the advantage of some experience with computers to begin with. Who knows? Any day now you may become another "Switched On" Bach. ce

What Is MIDI?

A MIDI interface is simply a box or plug-in card which is used to connect your computer and synthesizer together. MIDI is an acronym for Musical Instrument Digital Interface, which technically describes the communication protocols and hardware needed for a standarized compatibility between the products of various manufacturers.

It provides that the transmission of musical note events, channel information, voicing changes, etc. be handled the same for all MIDI synthesizers, so that useful computer software can be created that allows you theoretically to interchange synthesizers with uniform, predictable results, and to set up systems which allow you to incorporate and control many different synthesizers if so desired. At the same time, there is a provision for special system-exclusive information to be sent and received "over MIDI," which addresses the unique functions of a particular synth.

MIDI is a powerful standard. Although it is not without flaws, (such as its "slow" speed of 31.25 kiloHertz, which, as the data is sent in a serial stream, results in minimum delays of one millisecond between "simultaneous" musical note events), it appears that MIDI is here to stay, and that in addition to musical applications, it may be soon used for other diverse purposes such as home control of burglar alarms and yard lighting.

"I designed a game I'd want to play so you'd want to play it."

—Mark Cerny, designer/programmer

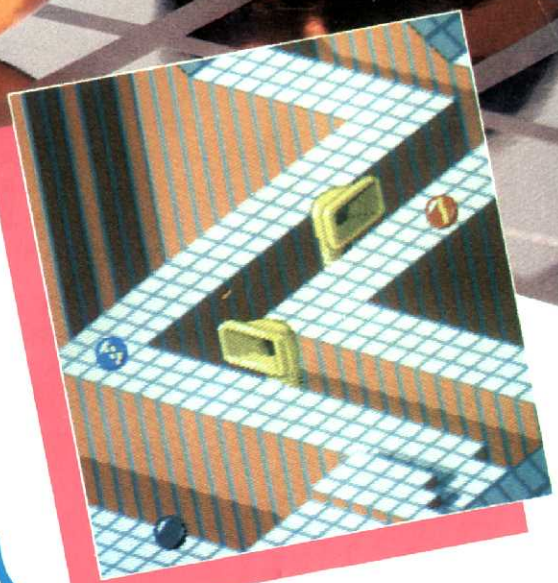
—Mark is an expert game player turned expert game designer. At 16 he was the first to "wrap" Defender at 1,000,000 points. He's never stopped getting high scores on video games or at the University of California at Berkeley. Today at 20 (with help from his team partner, Bob Flanagan), Mark has applied his "whiz kid" player experience and talent as a programmer to designing a coin video so big it'll blow you away.

"Like you, I've played a zillion ho-hum videos. So when I got the chance at Atari Games I designed a game that I could get into . . . that would really make it for me. Its craziness turned out to be great fun for *everybody*—beginners or experts!

It's sports competition, kinetics and strategy. . . a simultaneous 2-player marble race (you against an opponent or the computer) over fantastic 3-D terrains to find out who can Trak-Ball their marble over the Goal Line first.

Sounds easy, right? Wrong. You have to make sure your opponent doesn't trash you, or the "steelie" doesn't get you (don't pay any attention to Bob back there). Then there are all kinds of weirded-out creatures and objects to bust you—all the way through the six game levels. Ever get eaten by a hungry marble muncher? Vacuumed by a giant Hoover?"

Experience the spectacular animation, special stereo music track, and the super-fast action. Marble Madness. It's guaranteed to make you crazy!



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